

COAL

UNIVERSITY MICROFILMS
313 N 1ST ST
ANN ARBOR, MICH

MINING

JUNE, 1954

VOLUME 31, No. 6

there's this about
equipment from
Highway

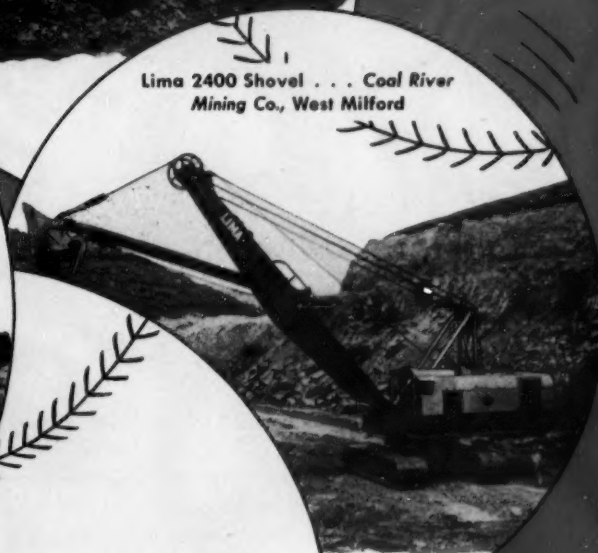
you can depend on it...always!

Take those extra tough jobs,
where minutes saved mean the
difference between profit and loss. It's
amazing what equipment from Highway will do.

It guarantees you efficient, dependable, contin-
uous operation... free from expensive downtime
and delays... boosts production volume while cutting
production costs.



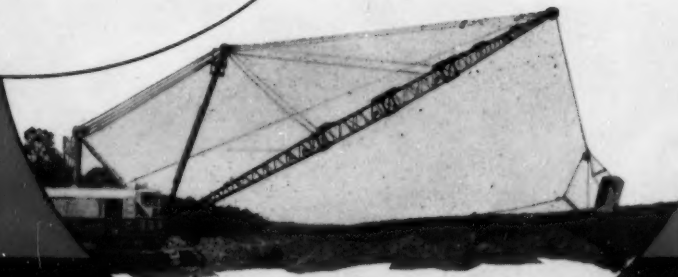
Allis-Chalmers HD-20 . . .
River Hill Coal Co.,
Keewaydin



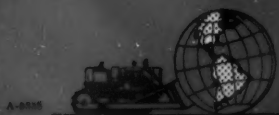
Lima 2400 Shovel . . . Coal River
Mining Co., West Milford



Allis-Chalmers Motor Scrapers
. . . R. C. Carlin Mine,
Snow Shoe



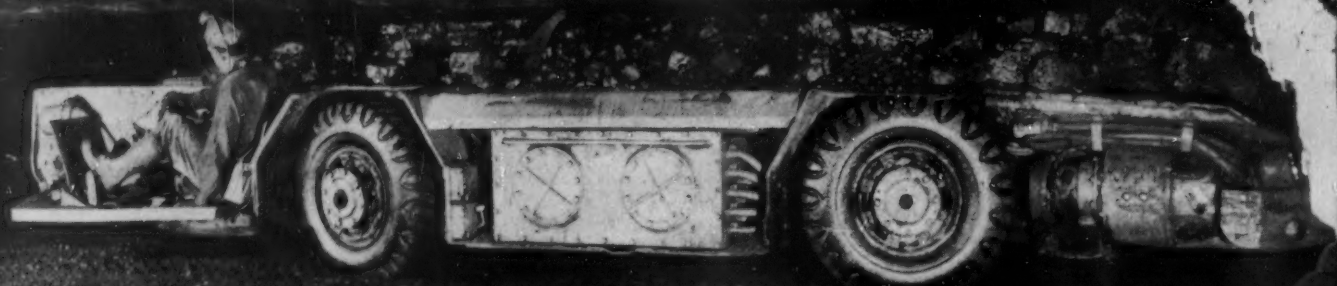
Lima 2400 Dragline . . . Diamond T
Stripping Co., New Milport



Highway EQUIPMENT
COMPANY

6465 Hamilton Ave. • Pittsburgh, Pa.

ALLIS-CHALMERS • JAEGER • BAKER
• GARWOOD • THOR • WAYNE CRANE •
GENERAL MOTORS DIESEL ENGINES • MASTER
• LIMA SHOVELS, CRANES, DRAGLINES • ERIE BINS



The 6-SC SHUTTLE CAR

can cut your haulage costs

Can't beat it for speed and flexibility in medium-low coal

In its field, this newest-model Joy 6-SC Shuttle Car is the best assurance of low-cost, high-capacity haulage you can get—and here's why.

First, it's field-proved as the fastest and most dependable car in its class. The 6-SC makes time where it counts . . . in continuous operation from the face to the discharge point and back again.

Second, this year's model includes many improvements, modifications and additions that greatly increase

its serviceability and all-around efficiency. Motors, gearing, wheel units, brakes and frame are all over-capacity, and it has interchangeable wheels and non-slip drive, plus such Joy-pioneered features as power steering and airplane-type disc brakes.

The Joy 6-SC has 4-wheel positive drive, 4-wheel hydraulic steering, and hydraulically adjustable elevating discharge. It is built in five heights from 29" to 38½" without sideboards, with a capacity range from 100 to 180 cu. ft.

● Other Joy Shuttle Cars include a type for every mining condition. **Joy Manufacturing Company, Oliver Building, Pittsburgh 22, Pa.** In Canada: **Joy Manufacturing Company (Canada) Limited, Galt, Ontario.**



*Consult a
Joy Engineer*

JOY

W80 CLASS

**WORLD'S LARGEST MANUFACTURER OF
UNDERGROUND MINING EQUIPMENT**



McCarthy

SELF-MOVING DRILL

HEAVY - RUGGED - POWERFUL



42" COAL RECOVERY DRILL

Mining Low-Cost Quality Coal...

This hydraulically self-moving 42" McCarthy Coal Recovery Drill is mining up to 500 tons of clean, low-cost, quality coal per day at Hodgeville, West Virginia. It has a three-man crew — operates in pits as narrow as 34 feet. Operator has all-around clear vision, including highwall. Jacks, hydraulically operated, lift 48 inches. Model 12 is built to handle augers 24 feet long from 16 inches to 48 inches in diameter as specified. Other McCarthy Coal Recovery Drills use augers 4, 6 and 12 feet in length.

McCarthy harrel type cutting head produces maximum quality and quantity of lump coal.

THE SALEM TOOL COMPANY
SOUTH ELLSWORTH AVE. • SALEM, OHIO, U. S. A.



Published monthly by Modern Mining Publishing Company. Publication Office—Advance Printing & Litho Co., Erie, Pa. Editorial and Executive Offices, Erie, Pa. Home address: P. F. JASIK, Publisher, 4875 Country Club Drive, Pittsburgh, Pa. Price: In the United States, \$2.00 year; all other countries \$5.00. Single copy 50 cents. Entered as second class matter at the Post Office at Erie, Pennsylvania, under the act of March 3, 1879.

PENN

Out front again...

with the PENN
telescopic
front
mounted
hoist



TANDEM TRAILER

20 Cubic Yard
Capacity

Haul bigger payloads for less

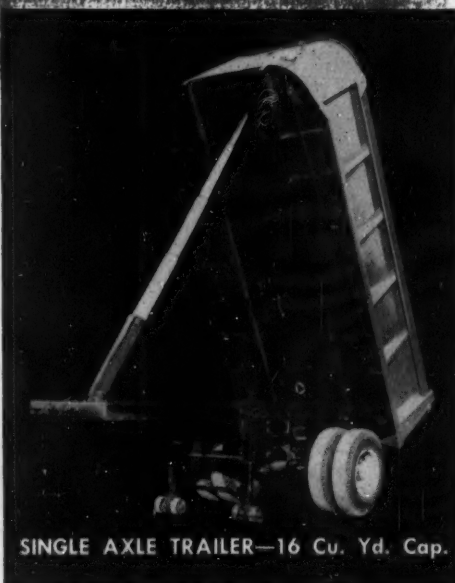
95% (PLUS) SAFER TO OPERATE

At last a new hoist which permits you to increase your payload and cut your overhead on single or tandem axle semi-trailers.

Increased payload is made possible by the weight saved on the single hoist and the fewer parts required for mounting it. Also the front mount feature places more weight on the tractor axle and less on the trailer chassis axle.

Lifting the load at the front of the body and eliminating all body over-hang ahead of the hoist assures greater stability. In actual use the Penn Telescopic Front Mounted Hoist has shown itself more than 95% safer than other types of hoist installation. The single hoist is more economical as it requires less parts and maintenance.

You can be sure if it's a Penn Body.



SINGLE AXLE TRAILER—16 Cu. Yd. Cap.

PENN BODY DIVISION

HOCKENSMITH CORPORATION

Telephones: Jeannette, Pa. 700 . . . Pittsburgh, Electric 1-1242

PENN, PA.



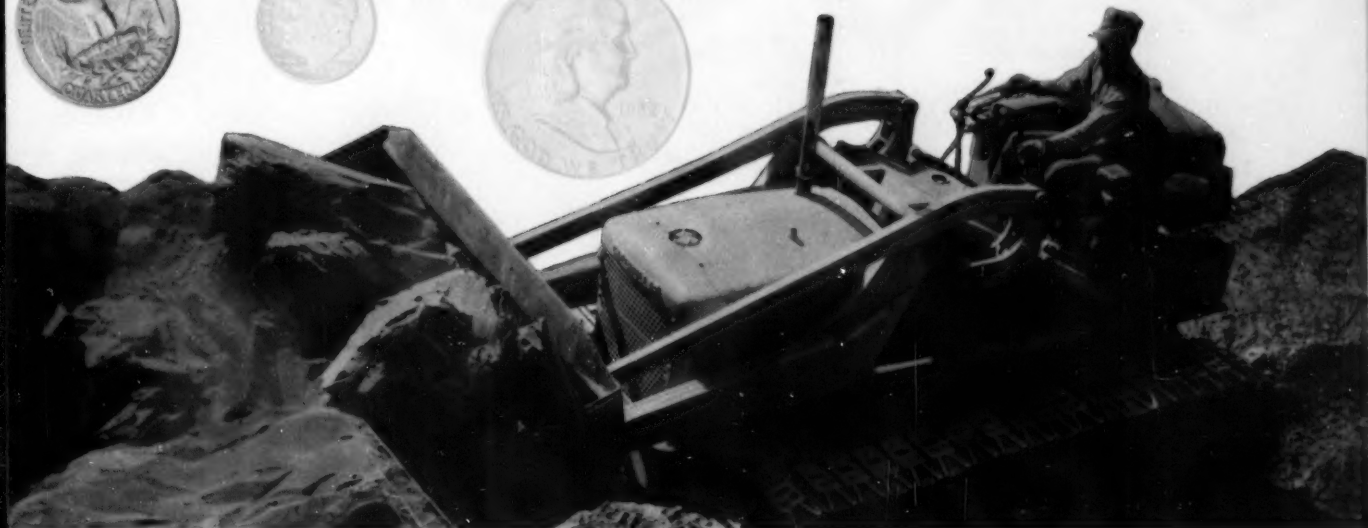
MONEY MAKER

ON ANY CONTRACT

CAT NO. 6 SHOVEL

THE CAT NO. 6 SHOVEL... can load out rock or clean up spilled sand. There's no material too tough, none too light. Box-section, reinforced lift arms crowd the 2 cu. yd. bucket before the 18,700-pound push of the 66 drawbar HP tractor. A 56 GPM hydraulic pump provides tremendous power for digging or for quickly lifting the heap-loaded bucket to the 10' 9" maximum dumping height. Mainframe mounts directly on tractor frame for unexcelled stability and strength.

These features enable the Cat No. 6 Shovel to handle excavation, loading, clean-up, dozing, backfilling or other tasks at low cost—to make *you* money anywhere!



BECKWITH MACHINERY COMPANY

6550 HAMILTON AVENUE., PITTSBURGH, PA. • OLD TOWN ROAD, CLEARFIELD, PA. • EAST BROADWAY, FARRELL, PA.
361-369 CONGRESS ST., BRADFORD, PA. • 1356 E. 12TH ST., ERIE, PA. • BUCKHANNON PIKE, CLARKSBURG, W. VA.

OHIO MACHINERY CO.

6606 SCHAAF ROAD, CLEVELAND, OHIO • 930 KINNEAR ROAD, COLUMBUS, OHIO • 2807 REYNOLDS ROAD, TOLEDO, OHIO
U. S. ROUTE 250, CADIZ, OHIO • 4000 LAKE PARK ROAD, YOUNGSTOWN, OHIO

WALKER MACHINERY CO.

1545 HANSFORD STREET., CHARLESTON, W. VA. • 4010 EMERSON AVE., ROUTE #2 PARKERSBURG, W. VA.

CATERPILLAR





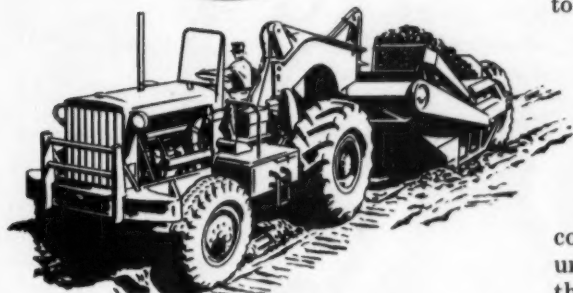
MONEY



...ON LONG OR SHORT HAULS!

Don't pin your Caterpillar DW20 or DW21 Earth-mover down to long-haul jobs. Their low operating cost, high productive capacity and long life can save you money on any haul—long or short.

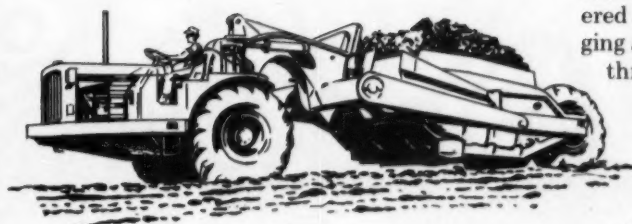
Some of the features of the DW20 and DW21 are listed here. There are many others that we would like to tell you about and show you. Call on us for a date to see these money-savers at work!



SAVERS

THE CAT DW20... The DW20—a four-wheeled prime mover—was designed from scratch as a high-speed, heavy-duty hauler.

Power, weight, speed, strength and capacity are in complete balance. No parts are adapted from other units—all are built expressly for the work they do in the DW20. The engine—honestly rated—delivers 225 HP at the flywheel... burns low-cost No. 2 burner fuel cleanly and completely. A hydraulic booster does the work of steering—the operator only leads the way. Anti-jackknife device and large, four-wheel air brakes assure operator safety. Speeds range to 26.6 MPH or to 34.1 with optional overdrive. Matched work tools include wagon, scraper, bulldozer, rock trailer.



THE CAT DW21... A two-wheeled prime mover powered by a 225 HP Cat Diesel Engine. Unexcelled lugging ability reduces gear changes—keeps the rig rolling through tough spots. All component parts are Caterpillar-built—specifically for high-speed operation. Positive hydraulic steering gives 90° turns in either direction—cuts turning width to 35' with No. 21 Scraper. Ease of operation and comfort eliminates 2 o'clock fatigue that comes with ordinary units. Speeds range, through five work-matching gears, to 20.0 MPH. The Cat No. 21 Scraper, with 20 cu. yd. capacity, and the new 31 ton Athey PR21 Rear-dump Trailer are matched to the power of the DW21.



THE NEW D8... Matching the work capacity of the DW20 and DW21, the new Caterpillar Diesel D8 Tractor has 150 drawbar HP, plus new long-life features, exclusive oil clutch, self-energizing steering clutches and a host of other features. As a pusher, the D8 can clip seconds from your loading cycles. Ask to see the new Cat Diesel D8 Tractor!

YOUR **CATERPILLAR** DEALER'S NAME APPEARS ON FRONT AND BACK OF THESE PAGES...

GET YOUR **MONEY'S WORTH** IN A **CAT** DIESEL ENGINE!

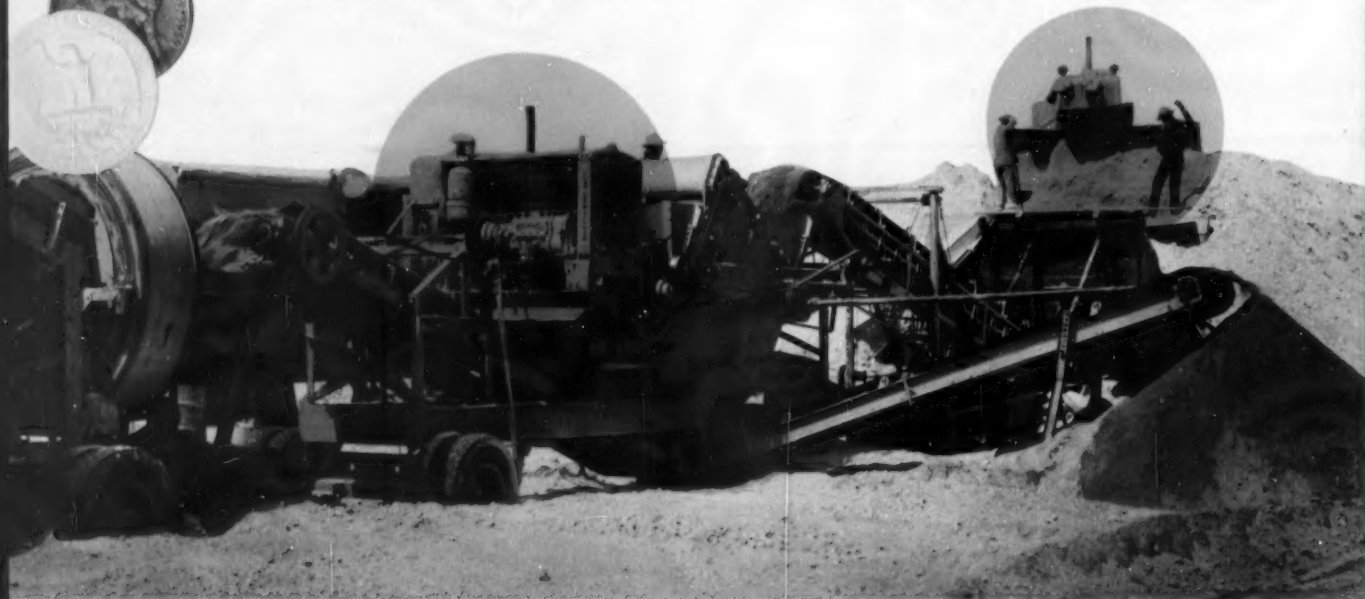
An engine's job is not done when it turns out required daily production. A day's work cannot, or even a year's work may not, give you a full dividend on your power investment. It takes years of steady operation, with minimum down time, before you get your money's worth—and *Cat Diesel Engines can give you these many years of trouble-free operation.*

There are many veteran Cat Engines with 40,000 to 50,000 hours of service on their records. And every Caterpillar Diesel Engine that leaves the world's most modern diesel engine

factory has the ability to equal those records.

Be sure you get your money's worth from your power investment—insist on Caterpillar Diesel Power in your new equipment or ask our engine experts to help repower your present equipment with a Cat Diesel. A free power analysis is yours for the asking!

Cat D8800 and D17000 Engines power the production of this crushing operation of D. W. Hopkins. The diesels have been powering the plant for eight trouble-free years. Helping in maintaining their steady, high production is a D8 with No. 8U Dozer.



BECKWITH MACHINERY COMPANY

6550 HAMILTON AVENUE, PITTSBURGH, PA. • OLD TOWN ROAD, CLEARFIELD, PA. • EAST BROADWAY, FARRELL, PA.
361-369 CONGRESS ST., BRADFORD, PA. • 1356 E. 12TH ST., ERIE, PA. • BUCKHANNON PIKE, CLARKSBURG, W. VA.

OHIO MACHINERY CO.

6606 SCHAAF ROAD, CLEVELAND, OHIO • 930 KINNAR ROAD, COLUMBUS, OHIO • 2807 REYNOLDS ROAD, TOLEDO, OHIO
U. S. ROUTE 250, CADIZ, OHIO • 4000 LAKE PARK ROAD, YOUNGSTOWN, OHIO

WALKER MACHINERY CO.

1545 HANSFORD STREET, CHARLESTON, W. VA. • 4010 EMERSON AVE., ROUTE #2 PARKERSBURG, W. VA.

CM-5

**YOUR
CATERPILLAR
DEALER**

YOUR MONEY'S WORTH IN NEW OR USED EQUIPMENT

COAL MINING

Vol. XXXI

JUNE, 1954

No. 6

Contents

Do You Know	5
Here and There in the Coal Industry	5
Advantages of Shooting Coal with Air	7
First Production Model of Joy Extension Belt Conveyor Offers Continuous Haulage From Continuous Mining Machines	9
Important Advantages of Self Rescuers	11
Independent Coal Producers Meet	13
Indexing Products Literature	15
First Meeting of the Coal Operators Golf Association	16
Hi-Wall Auger at Tri-County Coal Co.	18
New Roofing Method Reduces Maintenance Costs	21
Caterpillar Tractor Co. Opens New Plant At York, Pa.	23
Advertisers Index	27

Published Monthly By

MODERN MINING PUBLISHING COMPANY

Publication Office—1118 Chestnut St., Erie, Pa.

Editorial Offices—4575 Country Club Drive,
Pittsburgh, Pa., Phone Pl. 1-9411.

P. F. JASIK, Publisher and Editor

Twenty-four Hour Service

SKF

Hyatt

Bantam

Torrington

Aetna

Auburn

Medart-Timken

Bunting Bronze

Browning V-Belt Drives

Lincoln Lubrication



New Departure

Bower

Orange

Shafer

B & R B

American

Kilian

Victor Seals

HUBBARD 1-4400

Bearing Division

HARRIS

PUMP AND SUPPLY COMPANY

Brady and Sidney Streets, Pittsburgh 3, Pennsylvania



Grooved Pipe Coupling

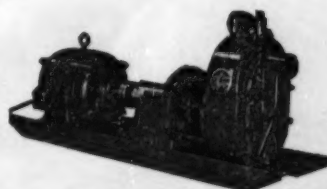


Plain End Pipe Coupling

Manufactured in All Pipe Sizes
Stock Carried in Pittsburgh**Harold C. Lusk Co.**

3045 W. Liberty Ave., Pittsburgh 16, Pa.

LOcust 1-4191

Distributor for: Gustin Bacon Manufacturing Co.
Kansas City, Mo.**MARLOW**
SELF-PRIMING
CENTRIFUGAL
GATHERING
PUMPS

Complete Line Carried in Pittsburgh Stock. Tel. HU 1-4400

HARRIS

PUMP AND SUPPLY COMPANY

Brady & Sidney Sts.

Pittsburgh 3, Pa.

DRAGLINE

P&H Model 955

70 Ft. Boom

2 Yd. Bucket

Buda Diesel Engine

Good Condition

Price -----\$22,500.00

ANDERSON
EQUIPMENT CO.

Box 1737

Pittsburgh 30, Pa.

Phone: LEhigh 1-6020

NEW and RELAYING RAILS

Call Foster for all sizes
and sections, promptly
shipped from nation-
wide warehouses.Switch Material and Track Accessories
properly matched and
fabricated to your exact
requirements.**L.B. FOSTER Co.**PITTSBURGH 30 • NEW YORK 7 • CHICAGO 4
HOUSTON 2 • LOS ANGELES 5

INCREASE YOUR PRODUCTION

with

DALY'S IMPROVED COMBINATION MINE CHECK

The Only Satisfactory Check on the Market Today

DALY TICKET CO., Collinsville, Ill.For Handling Highly Abrasive Pulps; Sand And Gravel,
Ash In Water; or Corrosive Liquids.
There Is No Pump In The World That Will Last
As Long As A**LINATEX PUMP**

508 Grant St.

S. E. GANE & CO.

Pittsburgh, Pa.

New use of modern equipment doubles profitable stripping depth — improves grade of coal



Much of the excavating is done by the giant HD-20G Tractor Shovel owned by Crawford Contractor's Ltd. This powerful hydraulic torque-converter driven unit combines crawler-tractor flexibility with the capacity of a four-yard shovel... is equally useful in stripping, loading and stockpiling.



A second HD-20 with bulldozer handles large-scale stripping and stockpiles coal. It took powerful postwar equipment like this to make strip mining practical in the Minto Coal Field.

BACK in 1940, the Avon Coal Company found it was not profitable to strip more than 25 feet of overburden to reach a seam of coal. For this reason, shaft mining was used exclusively in their Minto, New Brunswick coal field.

But, today, with the help of a fleet of modern Allis-Chalmers tractors, the company now can strip up to 60 feet of overburden and then mine a 20-inch seam of coal at a profit. What's more, this new method and postwar equipment has resulted in the production of a far better grade of coal... has opened many new markets for Minto coal.

Ask your Allis-Chalmers dealer how modern earth-moving equipment can increase the efficiency of your program.



Three Allis-Chalmers HD-5G Tractor Shovels offer the responsive bucket control necessary to skim off the narrow coal seam cleanly. The high-grade coal resulting from this precision work has won many new customers for the Avon Company.



Keeping haul roads smooth is only a part-time job for the Allis-Chalmers Model D Motor Grader. Equipped with "midship" scarifier and hydraulic rear-end loader, the D has become a most versatile handy man around the mine.

ALLIS-CHALMERS
TRACTOR DIVISION • MILWAUKEE 1, U. S. A.

Do You Know?

● A McGill University professor here has invented a coal-burning gas turbine engine which he believes will challenge the oil-burning diesel's favor with railroad men. By pulling a train four times as far for a given amount of coal, it also is expected to outclass its steam-powered ancestors.

At a recent unveiling of the experimental model, Prof. Donald L. Mordell told high-ranking Canadian government and railroad officials that his engine is more economical, more compact and more powerful than its diesel counterpart.

It burns all grades of coal, even low grades that steam engines cannot use. It extracts 20% to 24% of the thermal energy from coal in contrast to the steam engine's six percent figure. It gets around one engineering "bug" that has plagued previous engines of this sort through use of a new operating cycle which permits only clean air to drive the turbine blades. Formerly coal-ash damage to these blades has been considerable.

Prof. Mordell and his research team developed the engine under sponsorship of the Department of Mines and Technical Surveys and with a \$300,000 grant from the government. Another \$200,000 has been appropriated for use in perfecting the engine for commercial use. Prof. Mordell estimates this will take two years.

● Some day you may see a riderless tractor busily plowing a field while the farmer trims fruit trees nearby. An automatic pilot for tractors received patent No. 2,674,332 this week. Stanford R. Ovshinsky of Detroit is the inventor.

The automatic pilot works from distance-measuring and direction-sensitive controls. According to the patent, the device can be adjusted to guide the tractor over any preselected course.

● Discovery of a drug that may prove lifesaving for severely burned persons was announced by Steven E. Jordan, Wisconsin Alumni Research Foundation research assistant at the University of Wisconsin Medical School, at the meetings here of the Federation of American Societies for Experimental Biology.

In laboratory experiments with white rats, the drug will save up to 100% of animals in shock from severe burns. Of animals equally badly burned and shocked but not getting the drug, only 35% to 45% survived.

The drug is commonly called piperazine. Its full chemical name is 1-ethanesulfonyl — 4 — piperazine hydrochloride. Its safety is shown by the fact that the amount required to save the animal's life is only one-half the amount that would kill the animal.

The piperazine drug has not yet been tried in human patients suffering from burn shock, although simple piperazine has been used in treating gout and patients with too much uric acid in their blood.

Earlier studies showed the drug would help dogs survive shock due to loss of blood.

Collaborating with Mr. Jordan in the research were Allan G. Wheeler, research assistant in anesthesiology, William O. Foye, assistant professor of pharmacy, and Dr. O. Sidney Orth, head of the department of anesthesiology, at the university.

Here and There in the Coal Industry

● James W. Morgan, president of Ayrshire Collieries Corporation of Indianapolis, Ind., and Robert L. Hair, superintendent of fuel mines of The Colorado Fuel and Iron Corporation, Pueblo, Colo., are new members of the Board of Directors of Bituminous Coal Research, Inc.

Mr. Morgan has had many years' experience in coal mine operation and company administration. Since he was graduated from Lehigh University in 1921, he has worked with Lilly Coal Co., Lilly, Pa., C. A. Hughes Co. Cresson, Pa., and Truax-Traer Coal Co. He became vice president and general manager of Ayrshire Collieries Corp. in 1949 and president in 1950. During 1953 and 1954 he served as president of the Indiana Coal Association. He is also a director of Ayrshire Collieries Co., Republic Coal and Coke Co., and the National Coal Association. Mr. Morgan has held several positions of national scope with the U. S. Department of the Interior and the National Bituminous Coal Advisory Council.

Mr. Hair has been with the Colorado Fuel and Iron Company since 1912, when he went to Colorado as a mining engineer. He later became division engineer and in 1926, was promoted to his present job. Mr. Hair studied civil engineering at Ohio Northern University and worked in the Connells-ville, Pa., coke region as an engineer for the H. C. Frick Coal Company before joining C. F. & I. The production of the C. F. & I. mines is used almost entirely at the by-product ovens of the company at Pueblo, Colo.

Six BCR directors were re-elected. They are: J. N. Geyer, treasurer and production engineer, Imperial Coal Corp., Johnstown, Pa.; R. E. Jamison, Jr., vice president — sales, Jamison Coal and Coke Co., Greensburg, Pa.; S. B. Johnson, Jr., president, The Lorado Coal Mining Co., Columbus, Ohio; S. S. Nicholls, vice president,

C. H. Sprague & Son Co., New York, N. Y.; Dr. Huston St. Clair, president, Jewell Ridge Coal Corp., Tazewell, Va.; R. E. Salvati, president, Island Creek Coal Co.

● The eighteenth consecutive season of summer recreation camps for the children of Eastern Gas and Fuel Associates coal mine and store workers will open in late June, according to Virgil M. Beckett, Pittsburgh, Eastern's director of welfare.

Registration of campers between the ages of 8½ and 14 years will begin May 17, at mine offices and stores where their parents are employed.

Camp Lightfoot, for white children, is located near Hinton, W. Va., and is owned by Eastern Gas and Fuel Recreation Camps, Inc., a non-profit West Virginia corporation. Camp Washington-Carver, for negro children, near Beckley, W. Va., is leased from the West Virginia State Negro 4-H organization.

● Laurence E. Tierney, Jr., of Bluefield, president of Eastern Coal Corp., has been installed as president of the West Virginia Coal Assn. He succeeds the late L. Ebersole Gaines of Fayetteville. Mr. Tierney was succeeded as vice president of the association by L. Newton Thomas, of Charleston, president of the Carbon Fuel Co. Organized in 1916, the association has had but three presidents and three secretaries in its 38 years.

● Byron H. Cannon, 80, former executive secretary and treasurer of Western Pennsylvania Coal Operators Assn., died at his home in Mt. Lebanon, Pa., on May 31.

● Frank F. Mueller, President of the Roberts & Schaefer Company, Chicago, Illinois, builders of coal washing plants, died.



Here's why the Edison R-4 Double Filament Bulb saves Productive Man-hours — promotes greater underground safety

With the Edison R-4 double filament bulb, a burned-out filament doesn't mean lost time for the miner or a short crew for the foreman. A turn of the switch transfers the power of the unfailing Edison battery to the second filament—restores continued, brilliant illumination. There is only one bulb, located in the center of the headpiece, which gives the advantage of maximum reflector area.

This reserve protection saves hundreds of man-hours every year, adds an extra margin of safety. Write for full details.



BURN-OUT doesn't mean BLACKOUT

IF THIS FILAMENT
BURNS OUT ...



THIS
SECOND
FILAMENT
RESTORES
FULL LIGHT
AT THE
TURN OF THE
SWITCH



MINE SAFETY APPLIANCES COMPANY

281 North Saddle Creek Avenue, Pittsburgh 8, Pa.

At Your Service 77 Branch Offices in the United States and Mexico

MINE SAFETY APPLIANCES CO. OF CANADA, LTD.

Toronto, Montreal, Calgary, Edmonton, Winnipeg, Vancouver, Sydney, N.S.

When you have a safety problem, M.S.A. is at your service ... our job is to help you





Inserting air cartridge to shoot first hole in middle of the face.

ADVANTAGES OF SHOOTING COAL WITH AIR

The coal industry's progress in recent years has been constantly towards more efficiency and safer mining operations and in the production of quality fuel for all consumers.

Higher face production and safer mining operations have been achieved at many of our modern mines through better equipment, changes in mining systems, and sometimes with the introduction of new methods at the face. Usually, it is a combination of these factors which enables an operator to attain the efficiency and safer operation for which he is striving.

In this mine, located in the Pittsburgh Seam, all of the factors mentioned above have been combined into an operation that has resulted in a very safe operation and one that is producing more than 10 tons per payroll employee.

In this mine, the mining method could be classed as a modified block system. On the advance, eight entries, 14 feet wide on 54 ft. centers, are driven to the allotment line. Breakthrus are in line and driven across on 100 foot centers. After the entries are driven up, a break-

line is established on about 45° and the entry pillars are brough back in 18 foot open end "lifts." The cutting bar length is 11 feet and four cuts are required to complete a "lift" across an entry pillar. Full extraction is practiced except for occasional reserve blocks. "Cut maps" of the entry are provided, and each cut is numbered and taken

out in proper sequence in order that a proper breakline is maintained.

On the advance the entries are all roof bolted as they are being driven. Face preparation work includes short wall undercutters on "Cat" truck and shuttle cars. Loading is done with 14 BU Joys.

Coal is broken down with AIR-DOX. The compressors are housed



Cartridge being inserted to make last shot in upper right corner of face.

in a building on the surface, and the air is transmitted to the working face through a one-inch diameter pipe line. Pressure used is 10,000 lb. per sq. in. The pipe line generally is brought up to the loading ramp and from this point to the

working face is transmitted through $\frac{3}{8}$ " copper tubing. The AIRDOX tube used is the QM-500 and it has proved very successful not only for the coal but also for breaking down the slate over the coal.

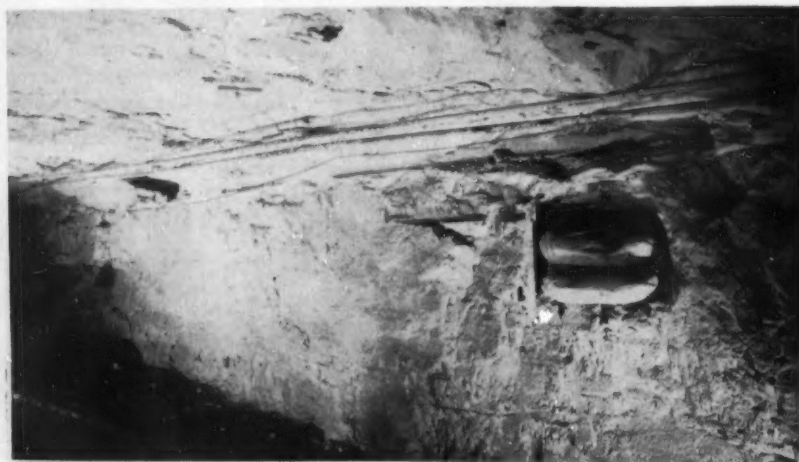
Full seam face preparation is practiced at this mine. Depth of cut is about $10\frac{1}{2}$ feet. In an entry cut, 5 coal and 3 slate holes are drilled and shot. In a rib cutover an extra coal hole is sometimes drilled. Breaking these cuts with AIRDOX gives excellent loadability which not only insures high production but also eases the job of the loading machine which in turn means lower maintenance costs.

The use of AIRDOX has other advantages, among them being:

1. Minimum shattering effect on roof strata. In conjunction with roof bolting this mine now has a roof far superior to that of previous years with other methods of control.
2. Firm, square faces and ribs and a minimum of sluffing of coal from ribs and face.
3. Working faces are at all times free from smoke and fumes. There is no delay in the face cycle, waiting for smoke to clear away from the face.
4. Faster rate of work throughout the mining cycle means increased efficiency and higher productivity.
5. The increase in overall size in the product and, in particular, the resultant decrease in fines means greater capacities through cleaning plants. Plant losses are cut down and this all adds up to an increased realization.
6. In all comparisons with other methods of coal breaking, in the final analysis AIRDOX proves to be the most economical and safest way of breaking coal.



Showing coal shot at the face. Note the large lump and clean shear from roof and ribs.



Air for Airdox Cartridges and water for spraying cutter bar are carried into the mine in steel pipe suspended from roof in entries.



Outside view of the air compressor building.



Inside the compressor building.



LD-1572 — Overall view of new Joy Extensible Belt Conveyor that provides continuous haulage from continuous mining machines. It extends to 1000 feet, moves 50 feet while loaded or empty, pauses only 5 minutes to add belt for each additional 50 ft. advance. Only 3 motors are used in the complete unit.

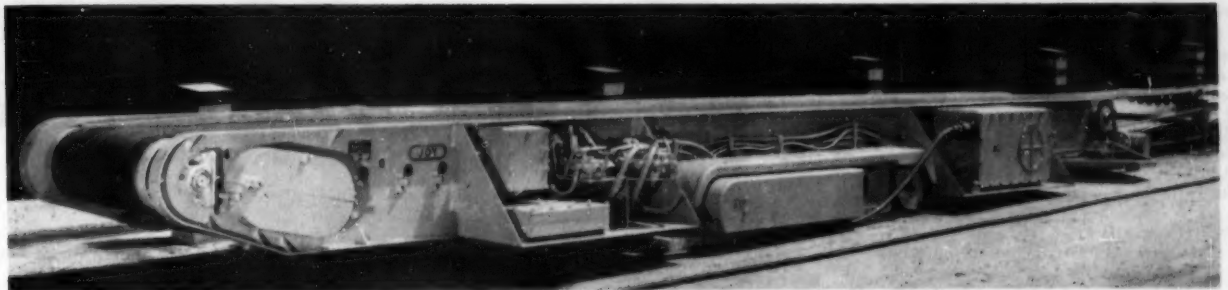
First Production Model of Joy Extensive Belt Conveyor Offers Continuous Haulage From Continuous Mining Machines

Joy Manufacturing Company announces a practical, long-distance, continuous haulage system to provide uninterrupted transportation for Continuous Miners in driving rooms and entries to 1000 feet, including breakthroughs and pillar extraction. The system embraces the first production model of the Joy Extensible Belt Conveyor shown at the 1953 Coal Show, plus the addition of a new Bridge Conveyor — a flexible connecting link

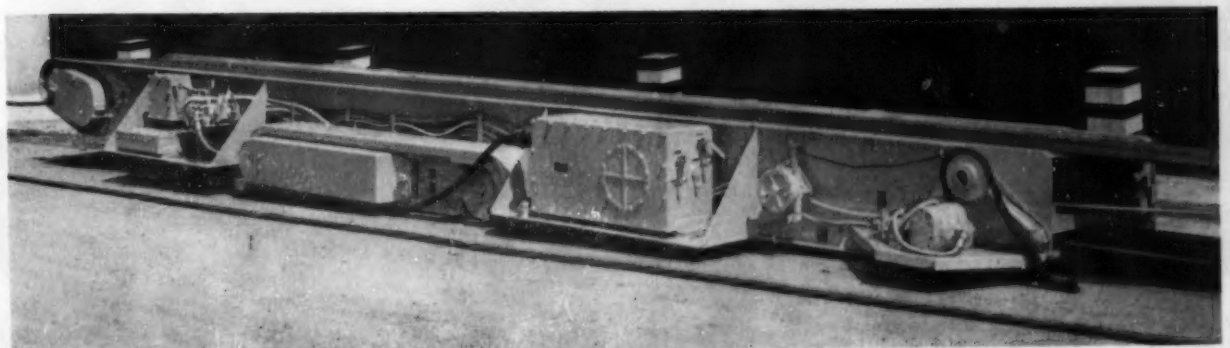
between the ExB and the Miner — and the new, two-bearing Joy LIMBEROLLER. The ExB consists of two main units — (1) a crawler-mounted driving section provided with a tandem drive and a multiple-loop takeup, automatically tensioned, with storage capacity of 100 feet of belt; and (2) a tail section, also crawler-mounted, that moves with the miner and extends the conveyor. Lightweight, portable idler stands are added to

the moving belt as required. The ExB extends or retracts for 50 feet while operating under full load. New sections of belt 100' in length can be added in 5 minutes permitting another 50' of advance. Belt tension, alignment and slip-page control are automatic. The one-piece Bridge Conveyor, with self-powered belt drive, is flexibly suspended from the discharge end of the Miner to permit a swing of

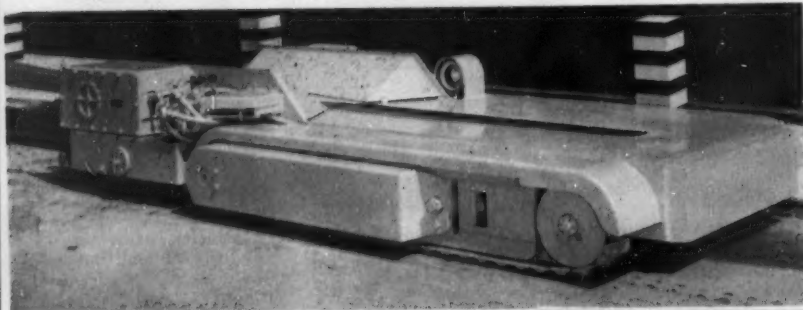
(Continued on Page 17)



LD-1571 — Closeup of Tandem Drive and Belt Storage Section. Crawler-mounted, it holds 100 feet of belt; has hydraulic power for fast, effortless addition of extra belting.

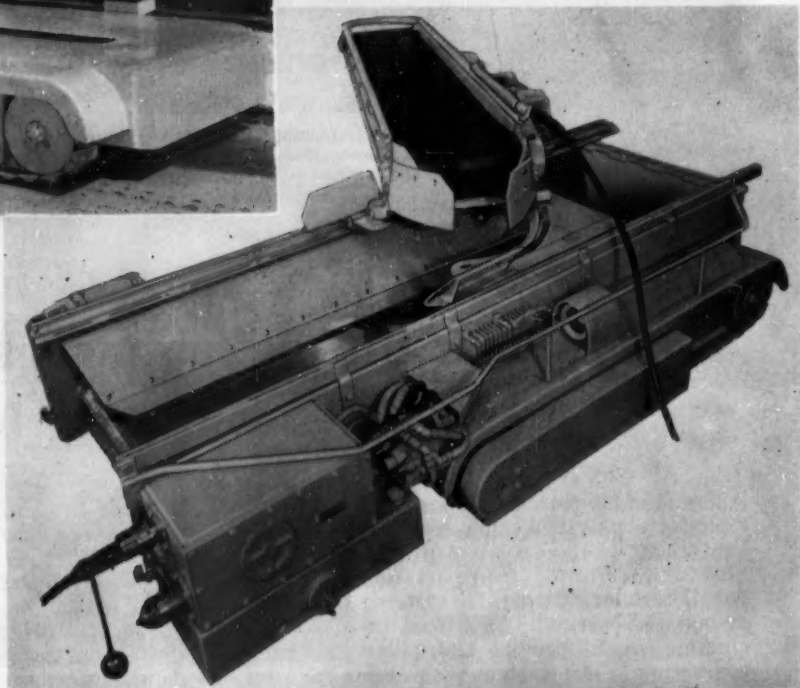


LD-1570 — Another closeup of Drive, showing support arms at rear that swing down to support reels of additional belting. Reels of 100 feet of belt are mounted on portable support platforms, fitted with 2 idlers, to further help make belt addition easy.

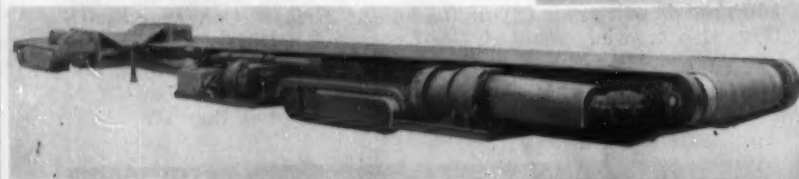


Left: Tail Section without Bridge Conveyor Mounting. It is quickly adjustable to track equipped hopper style for use with Bridge Conveyor.

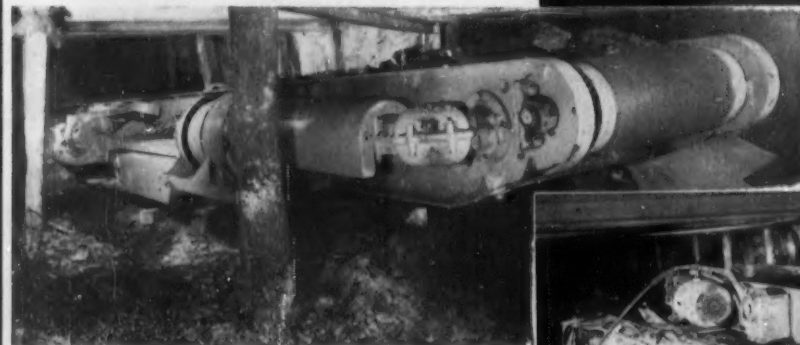
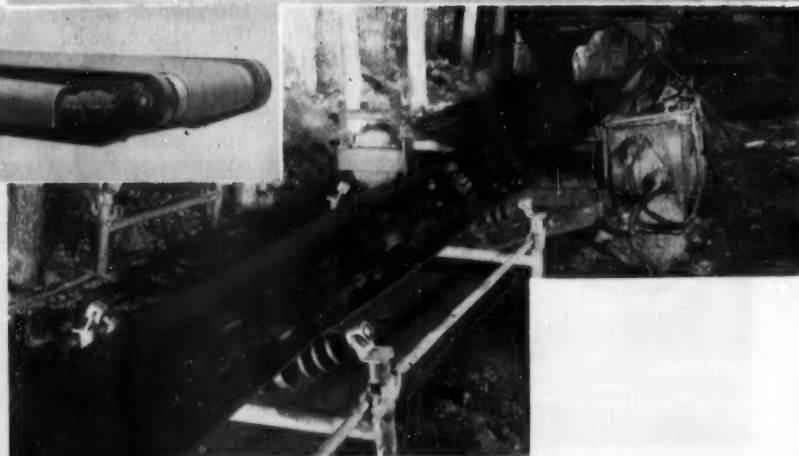
Right: Tail Section of ExB with full hopper, track-mounted sliding carriage and Bridge Conveyor, which provides a flexible connecting link between the Joy continuous Miner and the tail section of the ExB. This link permits a continuous, uninterrupted flow of material between the Miner and the ExB, regardless of the respective positions between.



Below: Another overall view of Joy Extensible Belt. Complete unit, together with lightweight, portable conveyor sections, can be knocked down, moved and set up again in new heading in $1\frac{1}{4}$ hours. It has only 3 motors.



Right: Joy Extensible Belt Conveyor, with Bridge Conveyor at tail section, delivers a continuous stream of coal from a Joy Continuous Miner as it advances while a 16' wide room. Notice perfect troughing of belt and true rolling action of the LIMBERROLLER Idler discs (they look like they are standing still!). Notice the simple conveyor section. Notice, too, how idler stands and side rails—enough for a 15-ft. conveyor—are stacked compactly along rib between timbers, ready for easy carry-through into next room when needed.



Below: Miner to Bridge Conveyor to ExB Conveyor tail and on to the drive and discharge point—a continuous stream of coal for true continuous mining!



Above: Joy Extensible Belt Conveyor drive about to discharge on mother belt. Drive stores 100' of belt, enough for a 50' advance; has hydraulic power for fast, effortless addition of extra belting in 11' lengths as required for each additional 50' advance.

Important Advantages of Self Rescuers

The importance of providing individual equipment underground for emergency use by miners was dramatically emphasized recently during a fire in Johnstown Coal & Coke Company's No. 4 Mine at Portage, Pennsylvania.

For some time, according to Safety Director W. C. Miller, the company not only has provided all men underground with Self-Rescuers, but also has conducted training classes and demonstrations in the use and care of the units.

When the fire started in the mine at a belt head, nine men were trapped in the area behind the blaze. All of them, however, had been trained in the use of Self-Rescuers which were readily accessible.

They donned the Self-Rescuers which provide respiratory protection against carbon monoxide—the poisonous gas in afterdamp. After realizing they could not break through the area in which the fire was located, all nine men retreated and escaped through another split in the mine.

One of the important advantages of having the Self-Rescuer available, Mr. Miller said, was the elimination of panic. The trapped men, knowing they would be protected against carbon monoxide by the units, calmly made their way to safety.

The Self-Rescuers, a develop-



This group of men from the Portage (No. 4) Mine of the Johnstown Coal & Coke Company, include both the rescued and the rescuers at the recent fire. Left to right they are: Jacob Barnas, Harry Norman, John Koshak, Fred Schaffranek, Charles Letzo, James Olsick, John Lloyd and William Bickelman. The rescued men are Schaffranek, Letzo, Olsick and Lloyd.

ment of Mine Safety Appliances Company, are provided by Johnstown Coal & Coke Company in all of the firm's mines. At No. 4 Mine, where the fire occurred, there are 190 of the units available, more than enough for every man

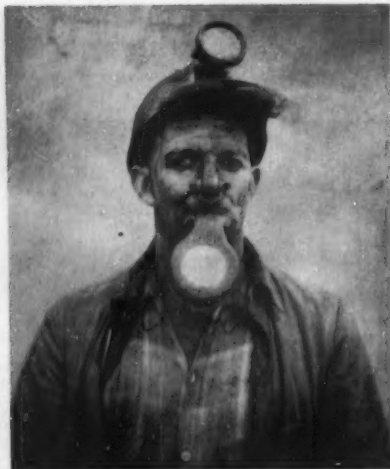
underground. At the working faces, the units are stored in strategically located damp-proof containers. Employees who are constantly on the move throughout the mine carry units with them at all times.



Safety Engineer W. C. Miller (holding one of the MSA Self-Rescuers) explains use of these units to a group of Johnstown Coal & Coke Company miners. The others are, left to right: Elmer Erickson, John Koshak, Paul Vargo, Clement George and George Letchus.



Examining a "cache assembly"—six of the units in a special case—are, left to right: Miners Michael Vargo, William Sindzik, James Olsick, W. H. Volkommer and Charles Letzo. Such cache assemblies are placed near working faces of the coal seam at the Johnstown Coal & Coke Company.



William Bickelman, of the Johnstown Coal & Coke Company, modelling the Self-Rescuer in this photo, was one of the men who wore these units in helping to fight the fire and to rescue the nine trapped miners. Both rescuers and the rescued men used these units, and report they helped the men work calmly and effectively in a dangerous emergency.

"In view of the recent near-disaster at Portage No. 4 Mine," Mr. Miller stated, "the real value of Self-Rescuers has been brought home with a terrific impact. They are the only friend the miner has until rescue work can be organized and mine rescue teams sent in to find and rescue them.

"These being the facts, it is only good judgment and common sense that everyone in the mines treat their Self-Rescuer with the same



Andrew Vrabel, of the Johnstown Coal & Coke Company, shows how he wears his Self-Rescuer on his belt where it is out of the way yet instantly handy for emergency use.

consideration that they tender their best friend. Who knows but that in the future they may mean the difference between life and death."

Approved by the U. S. Bureau of Mines, Self-Rescuers are described as being as essential in mines as life preservers on ships. A compact, lightweight device, it provides protection from 30 to 70 minutes or more against concentrations of carbon monoxide likely to be found after fire or explosion.

In its flexible molded rubber body, the unit contains an hermetically sealed chemical cartridge which is replaceable after use. This makes the Self-Rescuer economical to use for training pur-

poses. To operate the unit, a seal on the chemical cartridge is broken and a plunger is pushed in. It then can be put on, ready for immediate use.

● A new heavy-duty track roller frame and special large idlers for the 60" gauge, Cat D4 track-type Tractor, is now being made by Caterpillar Tractor Co., of Peoria, Ill.

The new arrangement is especially adaptable whenever rugged terrain is encountered in operations such as bulldozing and logging.

There are heavier "boxed-in" frames and replaceable wear strips for the front idler hold-down bearings.



The Norfolk & Western steam turbine locomotive is slightly over 161 feet long and weighs 586 tons complete with fuel and water. Designed for a maximum speed of 60 mph, the unit is capable of exerting a maximum tractive effort of 175,000 pounds, and a continuous effort of 144,000 pounds at 9 mph.



Robert E. Lee Hall, General Counsel of National Coal Association, testified in favor of legislation to amend the Natural Gas Act at a hearing in Washington before the Business and Consumer Interests Subcommittee of the Senate Interstate and Foreign Commerce Committee. Left to right: Subcommittee chairman Sen. W. A. Purtell (R. Conn.), Robert D. L'Heureux, subcommittee counsel, Sen. Lester C. Hunt (D. Yno.), sponsor of the bill, Sen. A. S. "Mike" Monroney (D. Okla.), official reporter, and Mr. Hall. Sen. John O. Pastore (D., R. I.) is back of Mr. Hall



Left: James Anderson, Tri-County Fuel Co.; Leslies S. Taylor, Taylor Engineering Co.; L. A. Schaeffer, and P. R. Schaeffer of the Big Five Coal Co.



Left: Urie Sanders, Sanders Coal Co.; Walter Coyer, Coyer Coal Co.; H. R. Anderson, guest, and W. E. Ray, State Mine Inspector.

INDEPENDENT COAL PRODUCERS MEET

The Independent Coal Producers is a group of Coal Strippers from Butler and adjoining counties in Pennsylvania.

This group held its First Annual Membership Meeting and elected new officers for the ensuing year. Among the guests were representatives of manufacturers of mining machinery and the law enforcement

department of Butler and Mercer Counties and official of the Mineral Producers Association of Kittanning, Pennsylvania and the Central Pennsylvania Open Pit Mining Association.

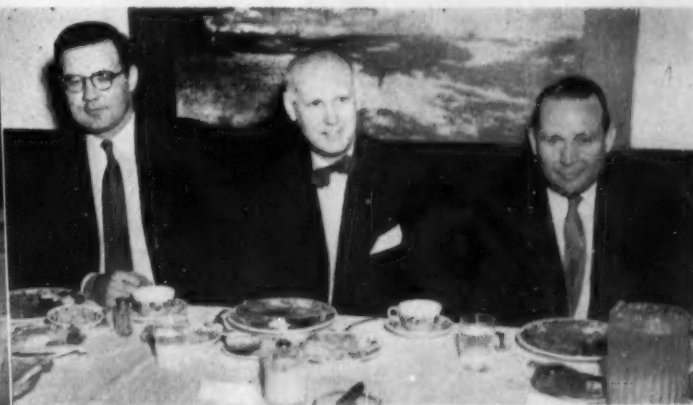
The meeting was under the direction of George W. Vickroy, President of the Carbon Coal Company and outgoing President of the

organization until Wm. Hager, President of the Sunbeam Coal Company was installed as the new President. George W. Vickroy received a case of high quality refreshments for his untiring service in the interest of the organization.

The principal speaker of the evening was Craig Thomas, Author of *Reign of Terror* in Widen County, West Virginia.



Left: Theo. Burns, of Lawrence & Rock, Attorneys for the Asso.; J. H. Wallins, President, Central Pennsylvania Open Pit Mining Asso.; W. M. Hanna, and the Honorable Clyde S. Shoemaker, Judge, Butler County, Pa.



Left: Frank Mahoney, Secretary, Mineral Producers Asso.; The Honorable Herman Rogers, Judge, Mercer County, Pa.; Herman Rock, of Lawrence & Rock, attorneys for the Asso.



Left: J. P. MacFarlane, Secretary, Independent Coal Producers Asso., Geo. W. Vickroy, out-going president of the Assoc.; Craig Thompson, Journalist and Author of *Reign of Terror in Widen County, W. Va.*; Mrs. Craig Thompson.



Left: Mr. C. E. Gutshall and Mrs. Gutshall who is Administrative Assistant to the Secretary of Mines, Pennsylvania. Albert Stewart, Secretary, Central Pennsylvania Open Pit Mining Association; Wm. L. Horger, President, Sunbeam Coal Co.; and incoming president of this Association.



Left: C. B. Edwards, Keystone Pipe & Supply Co.; Ted Helsing, Highway Equipment Co.; Paul E. Turner, and James R. Turner, of E. N. Turner and Sons.



Left: A. J. Miller and M. P. Hammer of the A. T. Green Machinery Co.; Les Slupe, Butler Equipment Co.; J. J. Janssen, Highway Equipment Co.



In this group are N. E. Sarver, Service Manager for the Highway Equipment Company and R. R. Shubert of the Shubert Hauling Company, Butler.



Left: Joseph Diego and Charles Mineo, Colonial Gas Coal Co.; Ken. Heltman, James Shimp and W. H. Dickey of the Beckwith Machinery Co.



Left: John B. Snyder and M. A. Urey of the Bowie Coal Co.; K. H. McFarland and W. C. Fuellhard of G. A. Stiles Co.



Left: Ted DeMarsh, DeMarsh Coal Co.; B. M. Meadows, Sunbeam Coal Co.; R. N. Cheapini, One Time Coal Co.

Indexing Individual Pieces of Products Literature

The classic engineering department problem of unravelling its filing systems of reference data, detail drawings, magazine tear sheets, technical records, manufacturers' catalogs and such—and co-ordinating them with the information classification systems employed by the company library and other information services—is solved in many cases by adopting a basic classification system such as that used by Sweet's Catalog Service and applying its classification and indexing methods to the file drawer or bookshelf.

By this procedure the engineering department does away with the confusion, duplication and conflict that exists between personal, department and company library files. It establishes a pattern for regulating and implementing the cascade of information which piles up daily in the engineering department's in-basket.

To illustrate the simplification that is possible, the manufacturers' catalogs in Sweet's 1954 Plant Engineering and Product Design Files are divided into seven and four major product classifications, respectively. The sub-classifications in the Plant Engineering File total 36; those in the Product Design File total 23. Yet these simplified ramifications of product data embrace nearly every area of engineering interest.

Here is the detail for general plant engineering departments—

1. **mechanical equipment**
 - a. material handling
 - b. vertical transportation
 - c. power transmission
 - d. pumps and compressors
 - e. plate construction, tanks
 - f. pipe, fittings, strainers
 - g. valves and traps
 - h. instruments and controls
 - i. lubrication
 - j. finishing
 - k. production equipment
 - l. miscellaneous equipment and supplies
2. **electrical equipment**
 - a. distribution
 - b. panelboards, motors, controls
 - c. power tubes
3. **materials**
 - a. metals
 - b. glass, plastics

- c. masonry
 - d. wood and wood preservatives
 - e. roofing and siding
 - f. grating, grids, floor plates
 - g. flooring, wall covering
 - h. masonry, treatments, water-proofing
 - i. paints, finishes, protective coatings
 4. **thermal insulation, sound control**
 - a. thermal insulation refractories
 - b. sound control, vibration isolation
 5. **structural equipment**
 - a. structural systems
 - b. doors and hardware
 - c. skylights, ventilators
 - d. partitions, fences, guards
 6. **plant utilities**
 - a. power generation
 - b. water conditioning
 - c. air conditioning, heating refrigeration
 - d. lighting
 - e. protection
 7. **service equipment, services**
 - a. service equipment
 - b. services
- This is the classification for literature of interest to product designers—
1. **materials**
 - a. metals
 - b. metal fabricators
 - c. plastics
 - d. plastic processors and fabricators
 - e. rubber
 - f. wood
 - g. glass
 - h. other materials
 2. **electrical parts**
 - a. motors and generators
 - b. controls
 - c. other electrical parts
 3. **mechanical parts**
 - a. transmission
 - b. flexible shafts
 - c. bearings
 - d. hydraulic and pneumatic equipment
 - e. pumps and compressors
 - f. fittings and valves
 - g. flexible tubing and hose
 - h. gaskets, packing and oil seals
 - i. instruments and controls
 - j. lubricating systems
 - k. fastening devices
 - l. other mechanical parts
 4. **techniques and services**

These classifications are by no

means static. They can be easily adjusted each year to meet ever-changing industrial information requirements.

Within the framework of a classification system such as that employed by Sweet's, it is helpful to adopt the following system of indexing individual pieces of product literature.

Under each sub-section, arrange the literature in alphabetical sequence by manufacturers' names. A convenient fractional indicator to identify each piece of literature consists of three parts — in the numerator, the major section number followed by the sub-section letter; in the denominator, the first two letters of the manufacturer's name in upper and lower case. In case two firm names in the same sub-section have the same first two letters, the third letter is added. Example:

The plant engineering department receives a catalog from the Acme Company describing their line of pumps. You would classify this catalog under section 1, sub-section d and index it 1d.

Ac, writing this indicator on the upper right hand corner or other convenient-to-read spot on the catalog cover.

One of the principal advantages of this system of filing is that it is open-ended. It allows you to discard obsolete data without having to revamp the indicators.

● Thomas J. Hunter has been appointed manager of the newly-created sales promotion department at the Lima Works, Baldwin-Lima-Hamilton Corp., Lima. Mr. Hunter resigned as business editor of "The



Tom Hunter

Lima News" in October, 1953, to join the company as sales promotion representative. Ten of his twenty years in the newspaper business were spent in display advertising.

First Meeting of the Coal Operators Golf Association

The Coal Operators Golf Association of Western Pennsylvania held its first golf party of the 1954

season at the Uniontown Country Club, Uniontown, Pennsylvania on Thursday, May 13. The second

party was held at the Nemacolin Country Club on May 27. The accompanying photographs were taken at the Uniontown party.

Following is the schedule of parties for the 1954 season of this association.

Schedule of Golf Events Coal Operators 1954.

Thurs., May 13—Uniontown C. C.
Thurs., May 27—Nemacolin C. C.
Thurs., June 17—Uniontown C. C.
Thurs., July 1—Nemacolin C. C.
Thurs., July 22—Monongahela C. C.
Thurs., Aug. 12—Nemacolin C. C.
Thurs., Sept. 2—Greene Co. C. C.
Thurs., Sept. 23—Uniontown C. C.
Thurs., Oct. 7—Nemacolin C. C.



Left: Dick Johnson, Div. Sales Mgr., Mine Safety Appliances Co.; Ed Seamon, President of the Association; W. K. Stedman, Gen. Supt. of Mines, U. S. Steel Corp.; Karl Konnerth, Asst. to President, Eng. U. S. Steel Corp.



Left: Harrold C. Lusk, Manufacturers Representative; Gordon H. Dunn, Roberts & Schaefer Co.; J. A. Redding, Salesman for Harold C. Lusk; John L. Sullivan, DuPont Power Co.



Left: Bruce Madera, Baton Coal Co.; R. E. Jones, Victaulic Co. of America; Bob Woodings of Robert Woodings Co.; E. J. Carroll, Asst. Supt., Robena Mine.



Left: J. A. Buck, First National Bank, Uniontown Pa.; J. Reckus, Plant Protection Supervisor, F. W. Peters, Asst. Gen. Mgr. Mines; and J. C. Durfee, Supt. Robena Slope, all of the U. S. Steel Corp.



H. C. Ngust, Joy Mfg Co.; J. E. Wilson, Jr., U. S. Steel Corp.; L. D. Jents and Russel Vance, Joy Mfg. Co.

FIRST PRODUCTION MODEL OF JOY BELT CONVEYOR

(Continued from Page 9)

75° to either side; and is flexibly supported at its discharge end by a track-mounted carriage with 10 feet travel on the tail section of the ExB to permit a similar 75° swing and a telescoping action at this point. Thus, it is automatically positioned with respect to the Miner and the ExB, and provides a continuous, uninterrupted flow of material between them. The ExB system can be completely dismantled at the worked out location, moved and set up again, ready for operation in approximately 1¾ hours, which has been proved in actual operation where 600' rooms are being driven. The ExB is available in 24", 30" and 36" belt widths; 15, 25 and 40 HP, AC or DC, permissible construction; ratings of 180, 280 and 440 tph. Belt speed is 425 fpm. Bridge Conveyors are available in belt widths, speeds and ratings to match the ExB models.

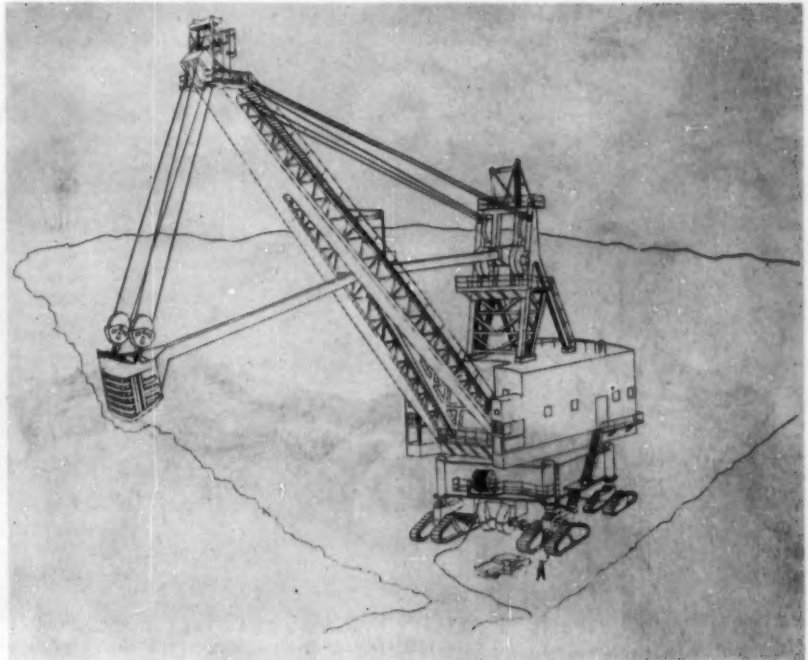
● Battelle Institute, Columbus, Ohio, has just completed the purchase of a 397-acre plot of land fifteen miles west of downtown Columbus.

According to Dr. Clyde Williams, president and director of Battelle, the acreage is needed because of newly developed opportunity for Battelle to engage in more large-scale experimental projects in engineering and agricultural fields.

Battelle has conducted an almost continuous expansion program since 1935. Indicative of the research center's growth is its increase in personnel. The present staff of 2150 is more than double that employed at the close of World War II. Its dollar volume of research was \$13,500,000 in 1953.

Right: An Austin Overshot Loader in stock pile of anthracite coal near Jeddo, Pennsylvania. The stock pile was made by stripping dragline.

The stock pile is stripped coal and is being loaded for hauling to the preparation plant. The Austin Overshot loader loads Euclid trucks without turning, blocking or swinging by raising its load in an overhead arc and dumping.



This line drawing of the new super stripping shovel being produced for the Hanna Coal Company Division of Pittsburgh Consolidation Coal Company, by the Marion Power Shovel Company of Marion, Ohio, shows the relative size of the machine. The man and car shown at the lower right are drawn to scale, pointing up the height of the 5 million pound shovel. An elevator will be built to travel inside the six foot diameter center pin (not shown). Built to move 100 tons of rock and earth at a single bite, the machine is expected to be in operation at Hanna Coal's stripping area in southeastern Ohio by late 1955.



FLEXIBLE COUPLINGS



Tranter

MANUFACTURING COMPANY

105 Fort Pitt Blvd.

Pittsburgh 22, Pa.

Court 1-0600



Overall view of the pit, auger unit and loading conveyor.

HIGHWALL AUGER AT TRI-COUNTY COAL COMPANY

Operations of the Tri-County Coal Company are located just South of the town of Boyers, Butler County, Pennsylvania. At this

operation the stripping is done with two Model 4500 Manitowac Draglines which move up to 60 feet of overburden to recover an aver-

age of three feet of the Lower Kittanning seam coal.

After the maximum economical limit of cover has been moved, the coal lying under overburden too high to strip is recovered by a Cardox Highwall Auger which drills holes up to one hundred feet deep. This auger has a 25 inch head and 22 inch auger. This auger is producing from 50 to 60 tons per shift.

In this particular pit the unstripped coal adjoins an old underground workings and some holes are drilled only fifty feet deep to hit the old mine. The drilling is done on the down grade to allow water in the deep mine to drain off gradually as each hole is drilled. To keep this pit dewatered a four inch Jaeger pump is kept going during the operating period.



Four-inch Jaeger pump is used to keep this pit dewatered.

● The Hydraulic Hoist and Steel Dump Body Manufacturers Association has announced the publication of a Hoist Classification Chart, compiled by its Engineering Committee. This is the first chart of its type in the industry. It has been published to provide a means of standardizing the capacity ratings and as a convenient method for comparison of hoists manufactured by the Association members.

The chart places all hoists in classes depending on the torque rating in inch-pounds developed by the hoist around its hinge shaft. Also included in the chart is a table for determining the size or rating of hoist needed for any anticipated use. Body dimensions and payload tonnage figures are used in the table which converts that information into the required hoist class needed for the given job.

The Engineering Committee has also compiled a Glossary of Terms used by the Industry. This has never been done before, and provides a standard terminology for the hoist and body field.

Copies of the Hoist Classification Chart and the Glossary are available from the Association. Requests for copies should be addressed to: J. R. Pat Gorman, Executive Secretary, Hydraulic Hoist and Steel Dump Body Manufacturers Association, 1740 "K" Street, N. W., Washington 6, D. C.

● Effective May 1st, J. E. Mullen has been appointed General Sales Representative for Pittsburgh Gear Company — subsidiary of Brad Foote Gear Works in Ohio and Western Pennsylvania.

This appointment is part of a general sales plan to offer to our customers the combined sales staffs of both companies to serve your gear requirements. Our facilities include three plants having a combined manufacturing floor space of 225,000 square feet devoted exclusively to gears and gear products. These plants employ approximately one thousand people and contain a full range of gear equipment to handle an infinite variety of types and sizes of gears.

Mr. Mullen, who was formerly associated with the Nuttall Works of Westinghouse Electric Company, and was vice president in charge of sales for National Erie Corporation of Erie, Pennsylvania, will continue to operate from his general offices — 1109 G. Daniel Baldwin Building, Erie, Pennsylvania.

PAGE DRAGLINE BUCKETS

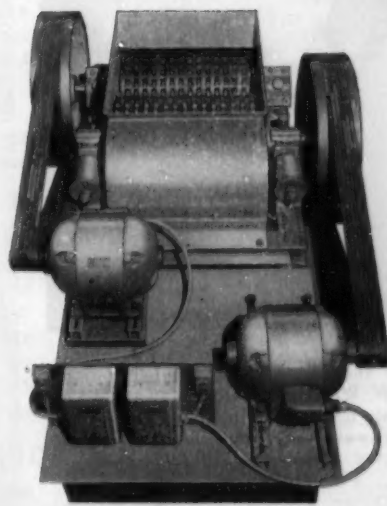
Geo. L. Wilson & Co.

Office & Warehouse • 310 Mendota St. • Pittsburgh 12, Pa. • CEDAR 1-7710

For A Product

More PROFITABLE — More MARKETABLE

Use the
**COAL
CRUSHER**
with
Double Rolls
the
SCOTTDALÉ



● Designed for higher tonnage output at a savings in power consumption, the shredding action of the crusher's toothed double rolls produces a more consistent product which will boost sales and profits. The Scottsdale has forged steel toothed gears; welded steel base, bronze bushed journal bearings; welded steel hopper, grooved flywheels.

NO. 63 SPECIAL — 2 Motor Drive — Produces a Product $\frac{3}{4}$ " to 8". Equipped with Two Grooved Flywheels. (No Gears)

Send for data
and prices . . .

SCOTTDALÉ MACHINE, FOUNDRY & CONSTRUCTION CO.

DEPT. CM

BOX 51

SCOTTDALÉ, PA.

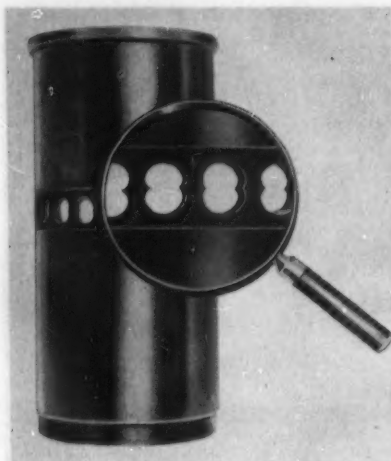


Figure "8" shaped openings in the cylinder liners of new General Motors 6-110 Diesel engines promote freer "engine breathing" and permit higher engine speeds for increased power output.



Left: Harry Kepler, Sales Engineer, for the Salem Tool Company and J. R. Woldrige, Woldrige Coal Company discussing the application of Highwall Auger at a recent meeting of the Central Pennsylvania Open Pit Mining Association.

● A new medium weight rock drill, known as DS-58 is announced by Davey Compressor Co., Kent, Ohio.

Reputed to possess unusually high output work capacity, it is recommended by the manufacturer as a production tool for drilling both primary and secondary blast holes. Its net weight is 62 lbs. with a length of 24¼ inches.

An outstanding drill feature is said to be the employment of pneumatic pawls in the rotation ratchet instead of the commonly-used mechanical pawls. These are "pushed" out of engagement of the ratchet teeth at the time the ratchet starts to turn, thus eliminat-

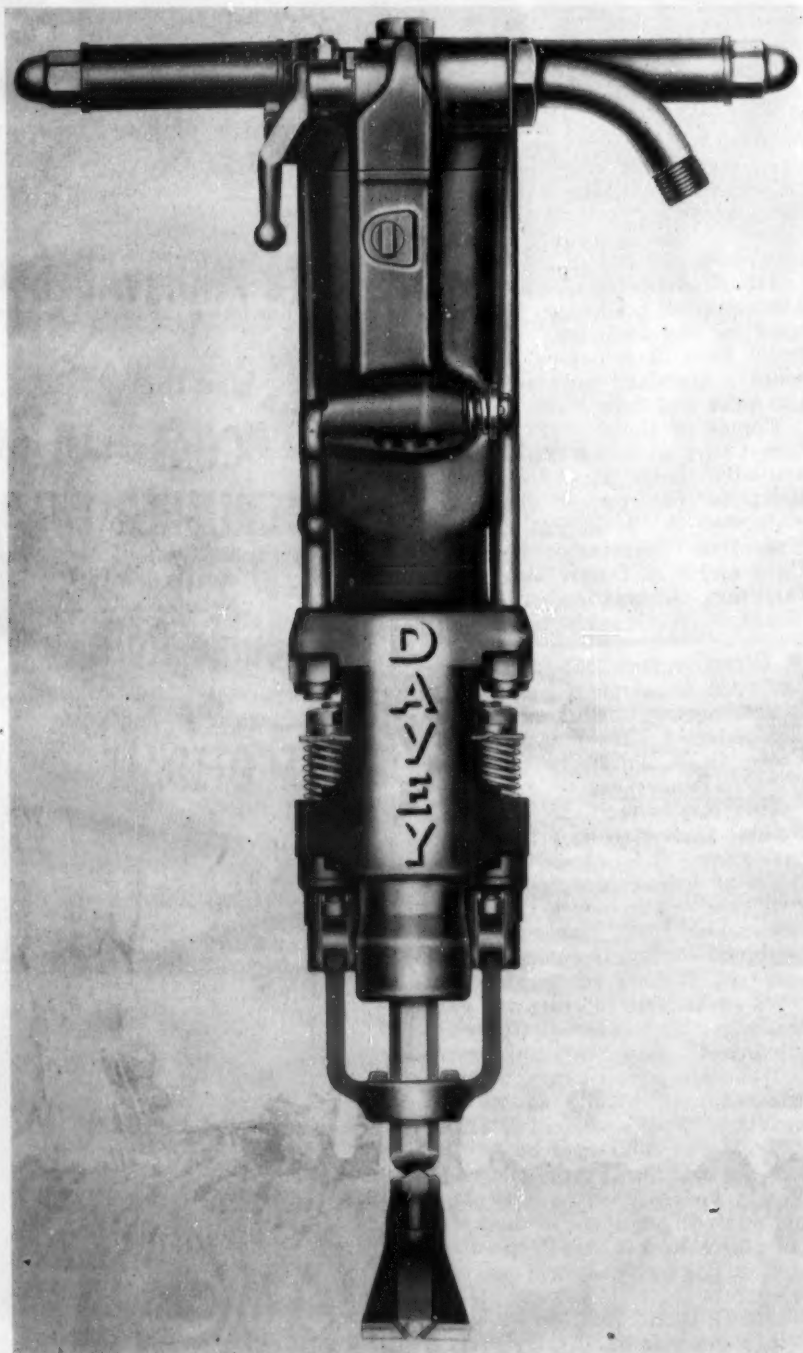
ing rubbing wear on the pawls. Likewise, Davey pneumatic pawls are so constructed that all 4 edges can be used before they are replaced.

Other design features, listed by the manufacturer, are involute splines, chrome-plated cylinder bores and rocket valves with double trip ports for positive piston hammer action.

The DS-58 is available in 4 types:

blower, blast, wet with manual water valve, and wet with auto-water valve. Each can be changed to any one of the other types without dismantling the drill. Three rotation speeds of fast, average and slow can be furnished. Raised center grip and raised tee handles are optional.

For further data, write Davey Compressor Co., Kent, Ohio. Ask for Bulletin E522.



New Roofing Method Helps Reduce Mine Maintenance Costs

One of the most important maintenance jobs on any coal mining property is the keeping of roofs of mine buildings in good condition.

Roofs of offices, equipment sheds, repair shops, power plants, tipples, etc. require frequent attention to keep them watertight. In fact, roof maintenance is one of the major upkeep jobs on any modern, progressive mine operation.

For this reason, mine operators will be greatly interested in a new time-saving, economical roof repair method just introduced by The Monroe Company, Inc., Cleveland 6, Ohio. Basis of this method is the use of a new type of fiberglass roofing membrane, known as "No-Rot," in conjunction with roof coating and roofing cement.

The latter two products, marketed by Monroe under the trade names of RUFFERSEAL roof coating and RUFFERSEALIT cement, contain silicones in addition to long fiber Canadian asbestos, asphalt and special penetrating and sealing oils.

A special grade of each product is also available for emergency use during rainstorms or in locations where moisture is always present. These are known as Wet Surface Rufferseal and Wet Surface Ruffersealit, respectively.

The time-savings and economies made possible by the new Monroe

Method are due to the sieve-like weave of the fireproof fiberglass threads which make up the No-Rot fabric. Because roof coating flows freely through this mesh, binding the fabric firmly to the roof, repairs can be made by using only one application of roof coating instead of the usual two.

In ordinary roofing jobs, it is necessary to first apply a thick coating of roofing material, then lay the fabric in it and finally apply a top coating over the fabric. With NO-ROT, the fabric membrane is simply placed on the roof and the coating placed over it. The RUFFERSEAL, in one application, binds NO-ROT to the roof and places a protective coating over it.

As its name indicates, NO-ROT is said to be impervious to rot and decay. It is also claimed to be immune to dampness and to possess great tensile strength to withstand stress and strain.

Another unusual NO-ROT feature and an important contribution to the success of the new method is NO-ROT's light weight.

This permits its production in king-size 300-ft. long, 45-inch wide rolls. These weigh only 17 lbs. and cover 1150 square feet. The big rolls can be easily bundled and logically give maximum coverage while reducing the number of necessary laps on an overall roofing job.

As NO-ROT is extremely flexible,



Siliconed roof coating and fiberglass membrane are materials used in new roofing method.

it can be fitted over corrugated surfaces, around pipes and into sharp corners to form a tight waterproof seal. For roof repair jobs (such as repairing blisters, cracks and open lap joints, and waterproofing areas around flashings, firewalls, chimneys and skylights) NO-ROT is available in 4-6-12-36-inch widths.

"A ounce of prevention is worth a pound of cure" is an often quoted statement which certainly applies to roofs. In view of the simplicity, economy and speed with which the new Monroe method can be employed, there seems to be no good reason why mine equipment and property should suffer damage due to leaking roofs.

HERE'S NEW METHOD FOR COMPLETE ROOF RESURFACING



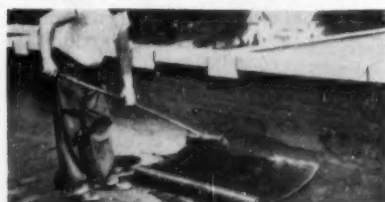
1. Pour out small amount of roof coating to spot stick membrane to roof.



2. Brush out coating to cover area 1 ft. wider than membrane roll.



3. Imbed end of roll in coating. Smooth out to eliminate wrinkles or buckles.



4. Pour on more roof coating. Brush over end of membrane to insure good set.



5. One man pours. Other, with squeegee, covers dry fabric by moving coating toward him.



6. First worker brushes coating to smooth surface. Second continues to coat with squeegee.



The Allegheny Machinery Sales Company, 600 Greentree Road, Pittsburgh, Pennsylvania, had its First Annual Exhibit and Demonstration of Coal Stripping and Road Building Machinery on May 15. A Buffet lunch and refreshments were served. About 750 guests attended.



Caterpillar Diesel DW20 Tractor with Athey wagon is hauling rock coal from pit to transfer hopper. Total of 4,000 tons of coal taken from pit per day. Operations near Middlegrove, Illinois.



● Appointment of R. H. Tomlinson as eastern division sales manager of The Galion Allsteel Body Company is announced by Oliver C. Henkel, president.



R. H. Tomlinson, eastern division sales manager, The Galion Allsteel Body Co.

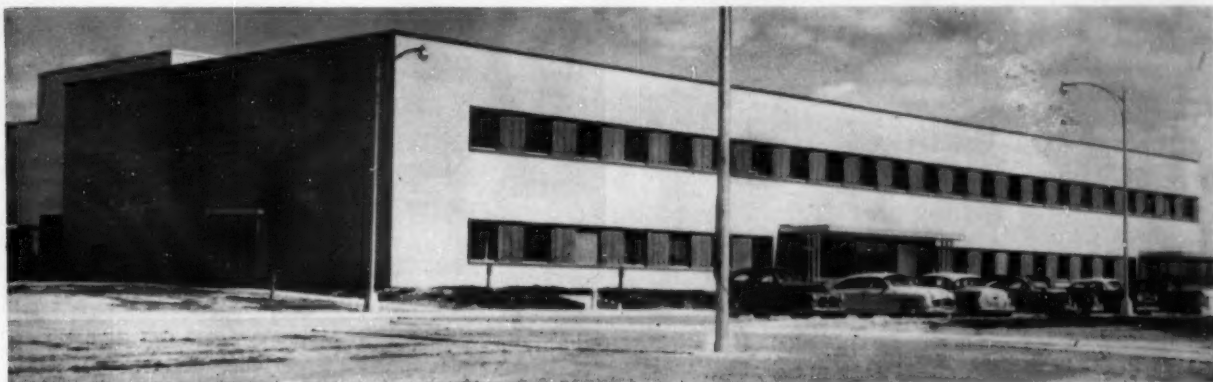
Mr. Tomlinson will direct sales and service of Galion Allsteel dump bodies, hydraulic hoists and LOAD-evator hydraulic tailgates in all states east of the Mississippi. His headquarters will be at the Galion Allsteel plant in Galion, Ohio.

For the past year, Mr. Tomlinson has been Galion's regional representative in Kentucky, Alabama, Mississippi, Louisiana and Arkansas. Mr. Tomlinson has been in the truck equipment business for the past 8 years as distributor and factory representative.

● Osgood-General announces that descriptive literature on the new $\frac{3}{4}$ yard Model 250, a combination Shovel, Dragline, Clamshell, Crane Hoe and Piledriver is now available upon request.

The specification covers superstructure and crawler dimensions, weights, and shows the machine's capabilities, with working range, and lifting capacity charts. Illustrations of the Model 250 as Shovel, Hoe, and Dragline, are included.

Ask for O-G Model 250 Specification No. 5421, from an O-G distributor, or write Osgood-General, P. O. Box 515, Marion, Ohio.



Here is an exterior view of the building which houses administration offices and manufacturing operations at the Caterpillar Tractor Co. plant at York, Pa.

Caterpillar Tractor Company Opens New Plant at York, Pennsylvania

● Improved parts service to its eastern and export customers and facilities have been achieved recently by Caterpillar Tractor Co., with the opening of its new plant at York, Pa.

The dual-purpose facility at York manufactures certain replacement parts for the Company's line of track-type tractors and also serves as a regional storage and shipping center for the Company's entire parts line. Currently the total operation employs approximately 650 people — nearly all of them from York since only the nucleus of the York staff was brought in from other Caterpillar establishments.

York was selected as a plant site

primarily because of its easy accessibility to ports on the eastern seaboard from which parts are shipped to the Company's export customers, and because the location permits faster service to Caterpillar customers in the eastern quarter of the United States. York is also located on the main line of the Pennsylvania railroad which provides a convenient route from the Company's largest manufacturing facility, located at Peoria, Ill.

Other considerations in determining the plant's location were: 1) The availability of skilled personnel, 2) Accessibility to eastern sources of quality steel, and 3) Availability of suitable land and utilities.

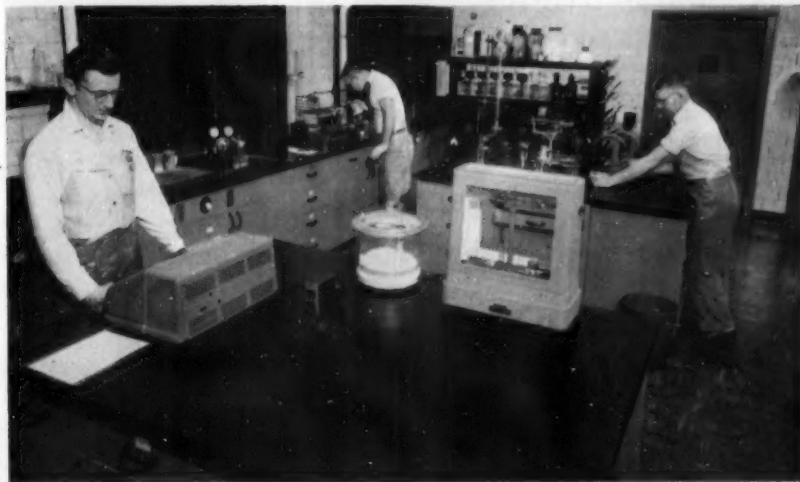
The entire plant includes approximately 770,000 square feet under roof.

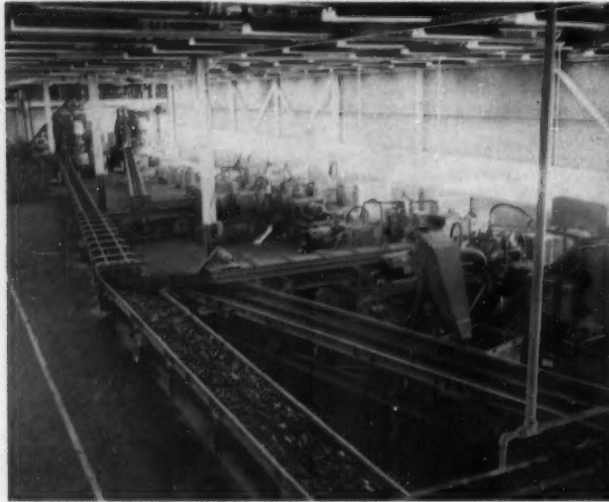
Steels used in the York plant are largely those which go into track link and track roller rim forgings. Because of the severity of use a more dependable, more uniform, higher strength steel than is ordinarily obtained from that of random or commercial forging quality is required. Steels for these forgings are purchased to rigid hardenability and toughness requirements, and it is the function of the metallurgical laboratory in York to verify strict adherence to Caterpillar standards, and to serve as a "guardian" of quality.

Since a large percentage of forgings and rolled parts are heat treated under precisely controlled operations, it is important that physical properties vary from mill heat to mill heat of most commercial steels, a high minimum value for strength and toughness is required of the steel made into forgings.

The heat treatment enhances the qualities of the forgings and prepares them for combating the rigors of use.

Much automatic mechanical handling in heat treatment and machining emphasizes the need for speedy answers to metallurgical problems. The metallurgical laboratory has been provided with equipment for quick and accurate tests





This is a view of the track link machining operation at the Caterpillar Tractor Co. plant at York, Pa.



Fork trucks are used to store parts in tiers in the 500x600 ft. building which houses the parts storage and shipping operation at the Caterpillar Tractor Co. plant at York, Pa. The building has 16 ft. truss height with column spacing of 20x30 ft.

of steels and non-ferrous products. This equipment is designed to help ferret out troubles which may be encountered in the different heat treating processes in the shop.

● A new rotary drill for heavy-duty service is announced by Davey Compressor Co., Kent, Ohio.

Designated as Model M-8A, it is recommended for core drilling, water well drilling, structure testing and the drilling of shot and

blast holes. Because of its employment of a new "air-blast" technique, it is said to drill faster and more economically than previously-available rotary drills.

Rated capacity of the drilling machine is $5\frac{5}{8}$ inch holes to a depth of 150 ft. with air and $6\frac{1}{4}$ inch holes to 1,000 ft. with mud.

Suitable for mounting on any make of truck, the rotary drill may be driven by a power take-off from the truck engine or by a separate gasoline or diesel engine.

Its 8-inch rotary table has a capacity sufficient to support and rotate 100,000 lb. loads. Draw works are of the 2-drum type, with line capacity of 470 ft. of $\frac{1}{2}$ inch line per drum.

Air compressor for "air-blast" drilling is a Davey Model X300 or X400 (400 or 500 c.f.m.) unit, depending upon individual requirements.

The machine's mast is of tubular open-face box type construction. It has a fabricated steel crown block assembly with two 20-inch diameter roller bearing sheaves. Height from bottom of crown to top of rotary table is either 24 or operator's needs. It allows for pluing 20 ft. sections of drill pipe. Mast is raised and lowered with 20,000-lb. rated hydraulic cylinders.

Weight of the complete unit, including a recommended truck, is approximately 20,000 lbs.



Davey Rotary Drill Model M-8A drilling blast hole for coal mining.



Rear view of Davey Model M-8A Rotary Drill. Controls are grouped at left rear for operator's convenience.

Manufacturing and Lubrication Engineers Since 1890

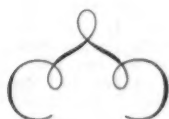
Lubrication Engineering follows an established, definite pattern of studying the machine and recommending a lubricant to meet the situation.

Let our engineer discuss with you the **NEW DEVELOPMENT IN HYDRAULIC lubrication.**

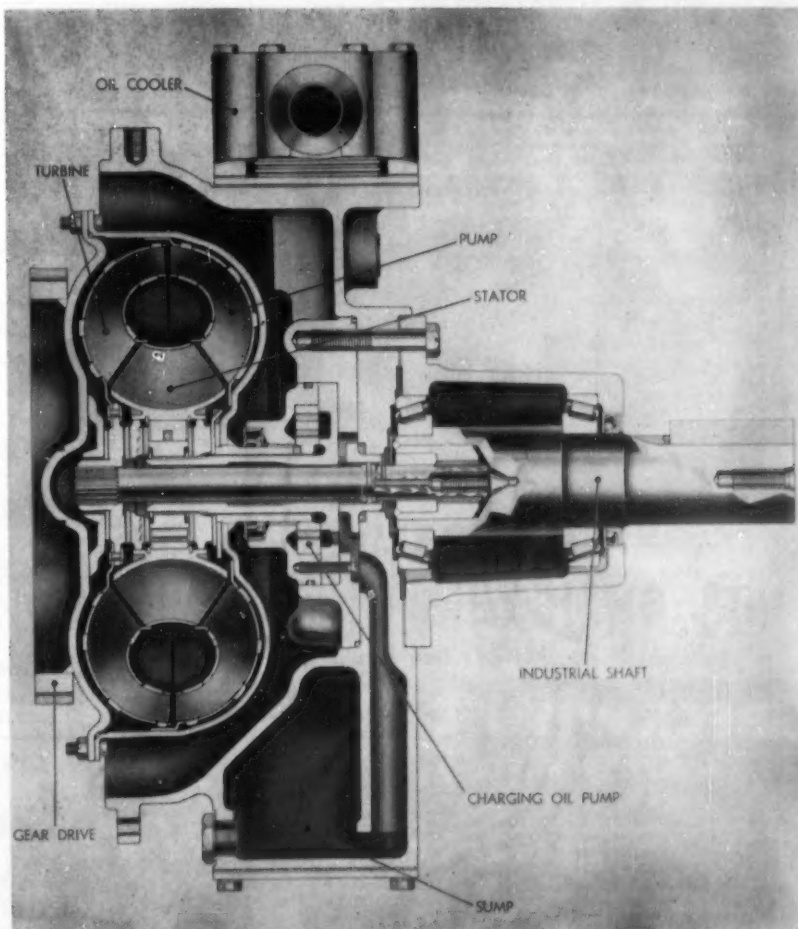
STIFFLER INDUSTRIAL LUBRICANTS CO.

ETNA, PA.

PHONES ST. 1-1571 and 1-2660



Cross section shows the new, "three element" Allison 200 Series Torqmatic Converter available with either industrial shaft or automotive flange. Like its new counterpart, the "four element" 300 Series, it is completely self-contained with oil cooler and all oil lines integral with the unit and with a conventional internal-external drive gear as used in clutch power take-offs. This results in flexible, easy installations—taking no more space than that used by conventional power take-offs. When torque output equals load demand, the converter acts as a fluid coupling to conserve fuel and boost engine and equipment life.



NOW at BECKWITH MACHINERY COMPANY



USED EQUIPMENT

Item WV-105 Caterpillar Model D8 Tractor mounted with Caterpillar Model 85 Bulldozer and LeTourneau Double Drum Cable Control, equipped with crankcase guard, front pull hook and canopy top. Installed new pistons, rings and complete valve job on starting motor. Installed new pins in master clutch, adjusted steering clutches and entire unit has been cleaned and painted. This unit is in good condition. F.O.B. Clarksburg, West Va.
BUY AND TRY ----- \$7,250.00

Item P-197 Caterpillar D8 Tractor, with LeTourneau Cable Control and LeTourneau angle cable dozer. F.O.B. Pittsburgh, Pa.
BUY AND TRY ----- \$3,900.00

Item P-186 Caterpillar Model D8 Tractor, mounted with LeTourneau straight dozer and Cable Control, equipped with crankcase guard and canopy top. Painted "AS IS, WHERE IS." F.O.B. Pittsburgh, Pa. ----- \$4,300.00

Item C-101 Caterpillar D7 Diesel Tractor, equipped with LaPlant Choate Hyd. angledozer, radiator guard, crankcase guard, front pull hook, canopy top, track, rollers, idlers and sprockets, good. New Paint and Decals. F.O.B. Clearfield, Pa.
BONDED BUY ----- \$12,500.00

Item C7142 Caterpillar D6 Diesel Tractor, 60" gauge, equipped with LaPlant Choate Hyd. Angledozer, crankcase guards, track roller guards, and pull hook. F.O.B. Clearfield, Pa.
CERTIFIED BUY ---- \$6,000.00

Item E-133 D4-60" Tractor, equipped with T4 lift, 1 yard bucket. Engine overhauled, completely, rails, rollers, sprockets and idlers are in good condition. F.O.B. Erie, Pa.
CERTIFIED BUY \$3,800.00

Item E-117 Model 112 Caterpillar Grader, equipped with scarifier and 12' blade. Has good tires and all around good condition. Carries a 30-day guarantee. F.O.B. Erie, Pa.
BONDED BUY ----- \$5,000.00

Item E-120 Galion Model 101 Tandem Drive Grader, with scarifier, 12' blade LHC engine, large tires all around. Steam cleaned and painted. F.O.B. Erie, Pa.
BUY AND TRY \$3,900.00

BECKWITH MACHINERY COMPANY

6550 Hamilton Avenue, Pittsburgh, Pa.
261-269 Congress St., Bradford, Pa.
Old Town Road, Clearfield, Pa.
1356 E. 12th Street, Erie, Pa.
E. Broadway, Farrell, Pa.
Buckhannon Pike, W. Va. Route 20 (So.),
Clarksburg, West Va.

J. T. Fish won't let you down...

Business isn't bad — it's just normal! And in normal times, the most important factor in the successful operation of a business is the dependability of the folks you buy from and sell to. We own what we advertise. Buy from the largest stock of the best mining equipment East of the Mississippi. In stock at our plant and at real bargain prices. NO FOOLIN! NO WILD COOSE CHASES! All type of Joy Cutters, Loaders, Shuttle Cars, Cat Trucks, Belt Conveyors, Chain Conveyors, etc. Includes

- 1—Joy 11RU rubber tired Cutter, like new.
- 1—Joy Continuous Miner, low vein.
- 2—14 BU low pedestal Loaders, 10 H. P. motors, Type 7AE.
- 2—14 BU, med. pedestal Loaders, 10 H. P. motors, 7RBE.
- 2—14 BU, 3PE, med. pedestal Loaders, 7½ H. P. motors.
- 2—12BU, 9E latest type Loaders.
- 2—8BU, Loaders, one 33½" high.
- 2—11BU Joy Loaders, hi capacity.
- 4—Joy T2-5 Cat Trucks, low pan. 1—T2-6.
- 1—Joy T1 Standard Cat Truck.
- 2—Joy 30" Belt Conveyors, 1000' and 2000' centers. Like new.
- 2—Joy 11B low vein Cutting Machines, 35 and 50 H. P.
- 4—Joy 6SC four wheel drive Shuttle Cars, rebuilt. Elevating discharge.
- 2—Joy 5SC four wheel drive Shuttle Cars.
- 4—32E15 Shuttle Cars, all hydraulic.
- 4—42E Shuttle Cars, as is or rebuilt.
- 10—32E9 Shuttle Cars.
- 2—32E10 Shuttle Cars, perfect.
- 2—Joy PL11-14 Elevating Conveyors, rebuilt.
- 2—Joy Belt Feeders PL12.
- Myers Whaley No. 3 Automat. Loaders.
- Jeffrey L-500 Loaders.
- Cedar Rapids portable 3 track tippie complete Conveyors, like new.
- General Electric and Westinghouse Rotary Converters, 100 to 300 KW.

- Goodman 360 Loaders.
- 4—G.M.C. and Caterpillar 75 and 100 KW Diesel Plants, 250 DC volts.
- 6—Goodman 512EJ Cutting Machines.
- 3—Baby Goodman 212AA Cutting Machines.
- Jeffrey 35L, 35B, 29C, 29L Cutters.
- Locomotives of all types in stock.
- 4—Brown Fayro HKL Car Spotters.
- 2—HGD Hoists, Brown Fayro.
- 2—MSA Rock Dusters.
- Incline Hoists, all types.
- Mine Cars, End Dump and Drop Bottom, 42", 44", and 48" track gauge.
- Car Retarders — Boom Hoists.
- 1000 G.I. 5 Gal. Gas and Water Cans.
- New Hydraulic Tow Trucks, pneu. tires.
- Transformers, all sizes and voltages.
- Joy and Jeffrey 12" and 15" Chain Conveyors.
- Shaker Conveyors, Goodman and Joy.
- Crushers and Vibrators.
- Conveyor Belting 26" and 30" for all purposes.
- 16 Yd. Dragline Bucket.
- Hardscogg Horizontal Drill.
- Quickway Truck crane and Shovel.
- P. and H. ½ Yr. Crawler Shovel.
- Copper Trolley and Feeder Wire, all types.
- Relaying Rail, all sizes.
- Mine Scales and Truck Scales.
- Electric Welders.
- Stationary Motors, AC and DC.
- 300 H. P. Natural Gas Engine.
- Alternator 2300 volt, 200 KW.

Thousands of Other Items

We Buy — Sell — Trade

Send Us Your Inquiries

J. T. FISH and COMPANY

Phone 2825

Logan, West Virginia

3200 Acres, Ohio, Meigs County. No. 8 A Metallurgical Coal—52" thick and 600 acres surface and timber. Located on Ohio River, with river or rail service. Sale terms can be arranged—Call Pgh. Lehigh 1-2254.
McNally Coal Washer 100 TPH. ¾" to 4".

Joy T2-5 Cat. Trucks — Permissible type.

Mine Hoists complete with full starting equip.

Clarkson 28 FA Loading Machine on rubber. 40 HP and 30 HP 440V-AC. Reliance Vertical Mtrs.

Dyster Tables for cleaning plant.

Joy 14-BU with 38 J Mtrs 7 B E

Joy Shuttle Car 6 SC — 5 E Elevating discharge—250 V. Cable type.

Joy Loading Head Conveyor type P L 11-7PE—a fine machine.

Joy T-1 — 3 P E Cat. Truck 250V.

Joy Cable Reel Shuttle Car type 32E

Goodman 512 Cutters C J H permissible—with T-2 "Cat." trucks.

Jeffrey Loco. 8 ton 42 ga. cable reel 250-v. and 550 v. also 13T loco.

Brownie Hoist for car spotting device

Lorain 820 J Shovel 1¼ yd. Air Controls. Nice as if new.

International Angledozer TD-18

Lorain 55 Shovel with new 150 hp Diesel Engine — Bargain.

Kanawa Coal Washer 130 TPH—bargain. Call us for full information.

Northwest Model 6—1½ yd. shovel.

Marion 362—1¼ yd. high front shovel.

Allis Chalmers 24 HD Dozer—2 yr. old

Caterpillar Model D8 Bulldozer—2 yr.

Joy MTB 30" Belt Conveyor—2,000 ft.

long. Also 800 ft. long.

Joy 8 BU Loaders—good condition

Goodman G 12½ Conveyor—good buy.

Goodman G15 Conveyors—good machines—250 v. and 500 v.

Westinghouse 500 KW-MG Set 550 v.

Complete automatic gear.

New—Myers Whaley "Cat" type

Shuttle Cars.

New—Myers Whaley "Cat" type and

track Loaders.

GE 150 KW-MG Set and 200 KW-MG

Joy 10 R.U. Rubber Tire Cutting

Machine.

Joy 11 R.U. Low Type Rubber Tire

Cutting Machine.

WANTED

1—Yd. Hi Lift on "Cats".

Joy Continuous Miner.

1—Coal Recovery Auger.

1—2 Yd. Combination Shovel and

drag.

T. L. (Les) Simpson

MACHINERY AGENT

1200 Woodbourne Ave.

Phone LEhigh 12254

Pittsburgh 26, Pa.

FOR SALE

1-75 K W, 250-V Caterpillar Diesel, Gen. Set.

1-100 K W, 250-V Buda Diesel, Gen. Set.

1-75 KVA1220-440-V Caterpillar Diesel, Gen. Set.

MEYER BROTHERS

Phone 701

Phillipsburg, Pa.

NEW AND REBUILT STORAGE BATTERY LOCOMOTIVES

Any Size Any Track Gauge
GREENSBURG MACHINE CO.
Greensburg Pennsylvania

Advertisers' Index

COAL MINING

JUNE, 1954

Allis-Chalmers—Tractor Division Agency—Bert S. Gittins	4
Beckwith Machinery Company Insert between Pages 2 and 3 Agency—Hosler Advertising Inc.	26
Central Ohio Steel Prod. Co. Agency—Palm & Patterson	28
Daly Ticket Company	3
J. T. Fish & Co.	26
Foster Company, L. B. Agency—Lando Advertising Agency	3
Farnival Machinery Company Agency—Arnold Andrews	3rd Cover
Gane & Co., S. E.	3
Greensburg Machine Company	26
Harris Pump & Supply Company	3
Highway Equipment Company Agency—Palm & Patterson, Inc.	1st and 4th Cover
Joy Mfg. Co. Agency—Walker & Downing	2nd Cover
Lusk Co., Harold C.	3
Meyer Bros. Co.	26
Mine Safety Appliances Agency—Ketchum, MacLeod & Grove, Inc.	6
Moore-Fletcher Hauling Company	27
Ohio Machinery Co. Agency—Hosler Advertising, Inc.	Insert between Pages 2 and 3
Penn Body Division—Hockensmith Corp. Agency—McHenry-Derek Advertising	2
Salem Tool Company, The Agency—Meek & Thomas, Inc.	1-27
Schroeder Bros.	27
Scottsdale Machine Foundry and Const. Co. Agency—McHenry-Derek Advertising	19
T. L. (Les) Simpson	26
Stiffler Industrial Lubricants Co.	26
Tranter Mfg. Co.	17
Walker Machinery Co. Agency—Hosler Advertising, Inc.	Insert between Pages 2 and 3
Wilson & Co., Geo. L.	19

New TRICYCLE HYDRAULIC POWER UNIT

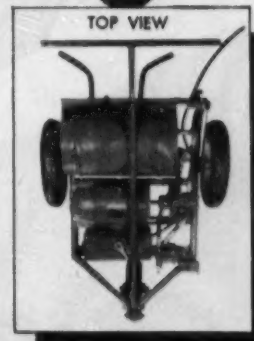
for use with the Schroeder
Hydraulic Coal Drill



LIGHT WEIGHT - RUGGED - MOBILE

From the first, the Schroeder Hydraulic Coal Drill has chalked up the highest standards of performance and service. Now comes this Tricycle Hydraulic Power Unit to further increase the value and efficiency of the drill.

Featuring simple hydraulic system and standard electrical equipment, the unit is light, sturdy and highly maneuverable. Complete weight with oil, drill, chuck and hoses is only 615 pounds. Can be propelled by hand in all but the worst bottoms. Less than 22" high and approximately 60" long—it has a bottom clearance of 6 3/4" and a tread width of 36". The new Schroeder Tricycle Power Unit, plus the Schroeder Hydraulic Coal Drill, provide you the best complete drilling unit for face operation. Write today.



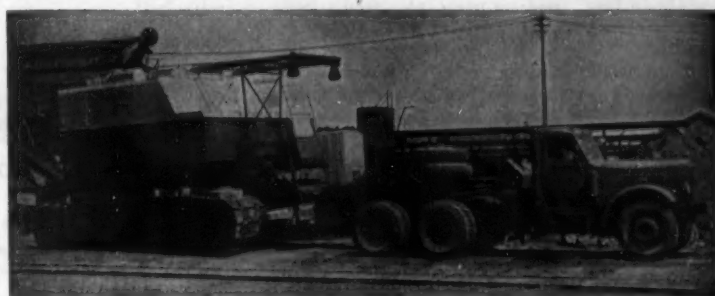
3116 Penn. Ave.
Pittsburgh 1, Pa.

SCHROEDER BROTHERS

HYDRAULIC, ELECTRIC & PNEUMATIC MINING EQUIPMENT

EXpress
1-1571

MOVERS OF COAL STRIPPING AND CONTRACTOR'S EQUIPMENT



HEAVY HAULING • RIGGING MOORE-FLESHER HAULING CO.

MOVERS of Coal Stripping and Contractor's Equipment
Preble & Adams Sts., North Side, Pittsburgh 33, Pa.
Phone ALlegheny 1-3600

SALEM "HERCULES" AUGERS FOR ELECTRIC DRILLS

Made To Withstand High Drilling Speed, Whip And Torsional Strain Of Electric Drills



Drills holes faster — Will not snap off at junk or chip points — Outlasts four or five ordinary augers.

THE SALEM TOOL COMPANY

SALEM, OHIO, U.S.A.

AUSTIN OVERSHOT LOADERS

Austin Model C-4
on Caterpillar D4

1,000 uses at every mine...

There's no limit to the number of mine jobs that can be handled better and more economically—by *Austin Overshot Loaders*.

Offered as complete equipment packages, these loaders, with $\frac{3}{4}$ to 8 cubic yard bucket capacities, are ready for easy installation on Caterpillar D2-4-6-7-8 tractors. Their exclusive "straight-in-line" loading principle often speeds up individual production tasks by as much as 50% . . . cuts costs . . . saves man-hours.

Normal Austin loading cycles require only 14 to 17 seconds. Consequently Austins load trucks and hoppers far faster than any other type of tractor loader. And—Austins are ideal for building coal stockpiles, haul road maintenance, handling drainage problems, working around shovels, salvaging coal that can't be reached by other equipment, backfilling spoil piles into coal pits, cleaning up around tipples, moving conveyors and unloaders. Frozen piles of coal do not stop Austins. They readily break through surface frost.

For further data . . . facts on what Austins can do for you, see your nearest Caterpillar dealer. Or write to Austin Division, Central Ohio Steel Products Co., Mansfield, Ohio. Ask for Bulletin L-8950.

A-9545

KEY TO AUSTIN LOADING SPEED IS "STRAIGHT-IN-LINE" OVERHEAD PRINCIPLE

Unlike ordinary tractor loaders, the Austin simply dozes into its load, raises it in an overhead arc—and dumps it into the haulage unit.



1 LOADS



2 RAISES



3 DUMPS

With the Austin, it's unnecessary to turn, block or swing the tractor. Consequently, you save 50% of the time required for loading with ordinary tractor loaders. A single Austin Loader will often keep busy as many as 15 haul trucks. And, you can operate in tightly confined areas such as underground tunnels and pits, where turning is impossible.

Austin Overshot Loaders are sold by Caterpillar dealers everywhere



AUSTIN DIVISION • CENTRAL OHIO STEEL PRODUCTS CO.

DENVER, COLORADO • MANSFIELD, OHIO

Affiliated Companies

{ THE GALION ALLSTEEL BODY CO., Galion, Ohio
{ MANSFIELD METAL PRODUCTS CO., Mansfield, Ohio

Is YOUR problem "low bidders" or "high costs"?

In these days of tough bidding competition, you earn profits *only* when you can do each job at lowest cost. The firm with fast, versatile, modern equipment is in the best position to make money.

It will pay you to carefully compare the production and profit margins of your present fleet with these LeTourneau-Westinghouse advantages:

Drive anywhere for jobs

With your Tournapull or Tournatractor, operator simply gets on and drives to new assignment. There's no time lost waiting for flat-bed, no loading or unloading. Because of this mobility, you can profitably handle small yardage jobs you would otherwise have to pass up.

Work longer seasons

You can work in wet spring or late fall weather when other earthmovers often are idle. Power steer "walks" Tournapull out of tough spots. Unique power-proportioning differential delivers up to 80% of the tractive effort to the wheel on firmest footing.

Convert to fit any job

You can interchange 6 different trailing units behind the same 2-wheeled prime-mover. Each trailing unit costs only about 1/4 of price of original complete machine. When you finish one job you can switch trailing units and



you're ready to tackle another type of work. Available for same prime-mover are scraper, rear-dump, bottom-dump, crane, flat-bed, and winch.

Greater speed

LeTourneau-Westinghouse 2-wheel prime-movers work and travel at speeds of 28 mph for the 122 hp 9-ton "D", 40 mph for the 186 hp 18-ton "C", and 36 mph for the 300 hp 35-ton "A". LeTourneau-Westinghouse's 186 hp 4-wheel tractor—the rubber-tired Tournatractor—has a top speed of 19 mph. High-speed electric controls, power steer, and short turning radius help cut seconds, even minutes, off each work cycle.

Less maintenance expense

Simple electric controls eliminate troubles of hydraulics or power take-off systems. Low cable needs, fewer sheaves cut downtime, reduce rope expense. 4 tires eliminate more than 500 track parts. Simple construction with enclosed gears in oil and power driving through antifriction bearings also lowers both lubrication and maintenance costs.

Modern LeTourneau-Westinghouse equipment is your best profit insurance for the future. Get all the facts now.

Tournapull—Trademark Reg. U.S. Pat. Off.
Tournatractor—Trademark G-641-G-b



Furnival Machinery Co.

Lancaster Avenue at 54th Street,
PHILADELPHIA 31, PA.

Water St., NEW PHILADELPHIA,
PENNSYLVANIA (Pottsville Region)

5105 Paxton St.
HARRISBURG, PA.

a tough production problem?



meet your *Highway* representative

Highway's equipment specialists are trained, experienced . . . and glad to serve you.

They'll be happy to survey your job and make practical economical recommendations to save you time and money.

A-9359

Allis-Chalmers HD-20 . . . Natalie Coal Co., Elizabeth



Lima 2400 . . . Iseman Mining Co., New Bethlehem

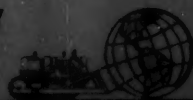


Allis-Chalmers "D" Grader . . . Spring Valley Coal Co., Lumber City

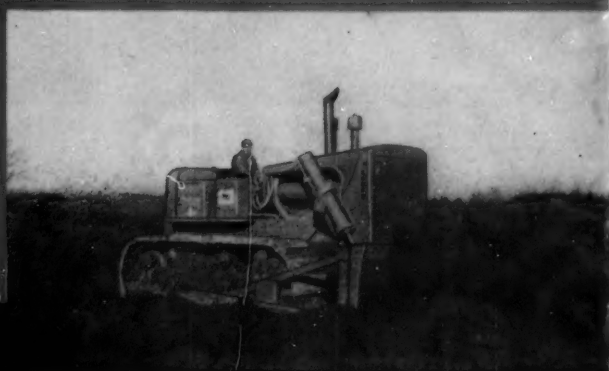
Highway

EQUIPMENT
COMPANY

6465 Hamilton Ave. • Pittsburgh, Pa.



ALLIS-CHALMERS • JAEGER • BAKER • GARWOOD • MASTER
THOR • WAYNE CRANE • GENERAL MOTORS DIESEL ENGINES
LIMA SHOVELS, CRANES, DRAGLINES • ERIE BINS



Allis-Chalmers HD-20 . . . Sunbeam Coal Co., North Washington